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Census of Manufactures

MC82-I-37C

INDUSTRY SERIES

Ship and Boat Building, Railroad and Miscellaneous Transportation Equipment

Industries 3731, 3732, 3743, 3751, 3792, 3795, and 3799



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The publications
from the 1982 Economic and
Agriculture Censuses are dedicated
to the memory of Shirley Kallek,
Associate Director for Economic Fields.
During her career at the Bureau of the
Census (1955 to 1983), she continually
directed efforts to improve
the timeliness and accuracy of
economic statistics.

1982

Census of Manufactures

MC82-I-37C

INDUSTRY SERIES

Ship and Boat Building, Railroad and Miscellaneous Transportation Equipment

3731	Ship Building and Repairing
3732	Boat Building and Repairing
3743	Railroad Equipment
3751	Motorcycles, Bicycles, and Parts
3792	Travel Trailers and Campers
3795	Tanks and Tank Components
3799	Transportation Equipment, N.E.C.

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INDUSTRY DIVISION

Gaylord E. Worden, Chief

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INTRODUCTION

ECONOMIC CENSUSES OVER TIME

The early beginnings of America's industrial output were first measured in the United States in the 1810 Decennial Census and again in 1820, when questions on manufacturing were included with those for population. Beginning with the 1840 Decennial Census, there were enumerations of manufactures and mineral industries at 10-year intervals up to and including the year 1900 for manufactures and 1940 for mineral industries. The latter census was again taken for 1954, 1958, 1963, and 1967.

Because of the increasing dominance of manufacturing in the early 20th century, Congress directed that quinquennial censuses of manufactures be taken beginning in 1905. However, from 1919 through 1939, these censuses were conducted every 2 years. The need for war-related current surveys in the early 1940's postponed the next census of manufactures until 1948 (for 1947). That census was again taken for 1954, 1958, 1963, and 1967.

Retail and wholesale trade data were first collected in 1930, and in 1933 information on selected service industries was added to the data-collection operation. These business censuses, as they were called, were again taken for 1935, 1939 (as part of the 1940 decennial program), 1948, 1954, 1958, 1963, and 1967.

Information on construction industries was obtained first in 1930 and again for 1935 and 1939. Data for the full spectrum of construction industries were not gathered again until 1968 (for 1967).

The need for transportation data to supplement information available from existing governmental or private sources was recognized by Congress in the late 1950's and early 1960's. The census of transportation (consisting of several surveys) was taken first for 1963 and again for 1967.

Since 1967, all of the above censuses have been taken quinquennially as part of the Census Bureau's economic census program. (For the 1977 censuses, the coverage of the service industries was broadened from "selected services" to "all services, except religious organizations and private households." A total of 41 additional four-digit standard industrial classifications¹ (SIC's) in 7 SIC major groups was added to the scope of the census. While most of the industries included for the first time for 1977 were covered again for 1982, some were not, i.e., hospitals; elementary and secondary schools; colleges, universities, and professional schools; junior colleges and technical institutes; labor unions and similar labor organizations; and political organizations.)

The first manufacturing census for an outlying area was conducted in Puerto Rico for the year 1909. Thereafter, with the exception of 1929, a census was taken at 10-year intervals through 1949. The first censuses of retail trade, wholesale trade, and selected service industries in Puerto Rico were conducted for 1939. These censuses also were taken for the years 1949, 1954, 1958, 1963, and 1967. A census of construction industries was introduced first in Puerto Rico for 1967. These censuses of Puerto Rico have been taken since then for the years 1972, 1977, and 1982.

Censuses of manufactures, retail trade, wholesale trade, and selected service industries were conducted in Guam and the

Virgin Islands of the United States for 1958, 1963, 1967, 1972, 1977, and 1982. Censuses of mineral industries were taken in the Virgin Islands of the United States for the years 1958, 1963, and 1967 but not since that time. A census of construction industries was also undertaken in these areas for 1972, 1977, and 1982.

Retail trade, wholesale trade, selected service industries, manufacturing, and construction industries were canvassed for the first time in the Northern Mariana Islands in 1983 (for 1982).

For 1982, the economic censuses and agriculture censuses were conducted concurrently.

USES OF THE ECONOMIC CENSUSES

The economic censuses are the major source for facts about the structure and functioning of the Nation's economy and provide essential information for government, business, industry, and the general public. They provide an important part of the framework for such composite measures as the gross national product, input-output measures, indexes of industrial production, and indexes measuring productivity and price levels. Information from the censuses is used to establish sampling frames and as benchmarks for current surveys of business activity, which are essential for measuring short-term economic conditions.

State and local governments use census data to assess business activities within their jurisdictions. The private sector uses the data to forecast general economic conditions; analyze sales performance; lay out sales territories; allocate funds for advertising; decide on locations for new plants, warehouses, or stores; and measure potential markets in terms of size, geographic areas, kinds of business, and kinds of products made or sold.

Following every census, thousands of businesses and other users purchase reports. Likewise, census facts are disseminated widely by trade associations, business journals, and newspapers. Volumes containing census statistics are available in most major public and college libraries. All 1982 data are available on microfiche from the U.S. Government Printing Office and most data on computer tape from the Census Bureau. Finally, the more than 50 State Data Centers also are suppliers of economic census statistics.

AUTHORITY AND SCOPE OF THE ECONOMIC CENSUSES

The economic censuses are required by law under title 13 of the United States Code, sections 131, 191, and 224, which directs that they be taken at 5-year intervals for the years ending in 2 and 7. The 1982 Economic Censuses covered manufacturing, mining, construction industries, retail trade, wholesale trade, service industries, and selected transportation activities. Special programs also cover minority-owned and women-owned businesses. The next economic censuses are scheduled to be taken in 1988 for the year 1987.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-00500176-0.

CENSUS OF MANUFACTURES

General

The 1982 Census of Manufactures is the 31st census of manufactures of the United States. For 1982, it was conducted jointly with the censuses of mineral industries, construction industries, retail and wholesale trades, service industries, selected transportation activities, and minority-owned and women-owned businesses.

This report, from the 1982 Census of Manufactures, is one of a series of 82 industry reports, each of which provides statistics for groups of related industries. Additional separate reports will be issued for each State and on special subjects, such as size of establishments, legal form of organization, and fuels and electric energy consumed.

These separate reports will subsequently be issued as portions of the final census volumes. Volume I, Subject Statistics, will show comparative statistics for industries, States, and standard metropolitan statistical areas. It also will show selected subjects, such as concentration ratios in manufacturing, selected materials consumed, manufacturing activity in government establishments, and water use in manufacturing. Volume II, Industry Statistics, will be a consolidation of reports for the 82 groups of industries showing the same information that is shown in this report. Volume III, Geographic Area Statistics, will contain establishment-based data (number of establishments, employment, payroll, value added by manufacture, and capital expenditures) for each State and its important standard metropolitan statistical areas, counties, and places, by industry groups and important individual industries. Totals for "all manufacturing" will be shown for counties and places with more than 450 manufacturing employees. The introduction to the final volumes will discuss, at greater length, many of the subjects described in this introduction. For example, the volume text will discuss the relationship of value added by manufacture to National income by industry of origin, the changes in statistical concepts over the history of the censuses, and the valuation problems arising from intracompany transfers between manufacturing plants of a company and between manufacturing plants and sales offices and sales branches of a company.

Scope of Census and Definition of Manufacturing Industries

The 1982 Census of Manufactures covers all establishments employing one person or more primarily engaged in manufacturing as defined in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 Supplement.¹ This is the system of industrial classification developed over a period of years by experts on classification in government and private industry under the guidance of the Office of Management and Budget. This system of classification is in general use among government agencies as well as organizations outside the government.

The SIC manual defines manufacturing as the mechanical or chemical transformation of inorganic or organic substances into new products. The assembly of component parts of products is also considered to be manufacturing if the resulting product is neither a structure nor other fixed improvement. These activities are usually carried on in plants, factories, or mills that characteristically use power-driven machines and materials handling equipment.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-00500176-0.

Manufacturing production is usually carried on for the wholesale market, for transfers to other plants of the same company, or to the order of industrial users rather than for direct sale to the household consumer. Some manufacturers in a few industries sell chiefly at retail to household consumers through the mail, through house-to-house routes, or through salespersons. Some activities of a service nature (enameling, engraving, etc.) are included in manufacturing when they are performed primarily for the trade. They are considered nonmanufacturing when they are performed primarily to the order of the household consumer.

Relationship Between Annual Survey of Manufactures and Census of Manufactures

The Bureau of the Census conducts the annual survey of manufactures (ASM) in each of the 4 years between the censuses of manufactures. The ASM is based on a scientifically selected sample of approximately 55,000 establishments and collects the same industry statistics (employment, payroll, value of shipments, etc.) as the census of manufactures. In addition to collecting the information normally requested on the census form, the establishments in the ASM sample are requested to supply detailed information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services.

Establishment Basis of Reporting

The census of manufactures and the annual survey of manufactures are conducted on an establishment basis. A company operating at more than one location is required to file a separate report for each location. Companies engaged in distinctly different lines of activity at one location are requested to submit separate reports if the plant records permit such a separation and if the activities are substantial in size.

In 1982, as in earlier years, a minimum size limit was set for including establishments in the census. All establishments employing one person or more at any time during the census year are included. The same size limitation has applied since 1947 in censuses and annual surveys of manufactures. In the 1939 and earlier censuses, establishments with less than \$5,000 value of products were excluded. The change in the minimum size limit in 1947 does not appreciably affect the historical comparability of the census figures except for data on number of establishments for a few industries.

This report excludes information for separately operated administrative offices, warehouses, garages, and other auxiliary units that service manufacturing establishments of the same company (see Auxiliaries).

Manufacturing Universe and Census Report Forms

The 1982 Census of Manufactures universe includes approximately 345,000 establishments. The amounts of information requested from manufacturing establishments were dependent upon a number of factors. The more important considerations were the size of the company and whether it was included in the annual survey of manufactures. The methods of obtaining information for the various subsets of the universe to arrive at the aggregate figures shown in this publication are described below.

1. Small Single-Unit Companies Not Sent a Report Form

In the 1982 Census of Manufactures, approximately 140,000 small single-establishment companies were excluded from filing reports. Selection of these small

establishments was done on an industry-by-industry basis and was based on annual payroll and total shipments data as well as on the industry classification codes contained in the administrative records of other Federal agencies. The cutoffs were selected so that these administrative records cases would account for no more than 3 percent of the value of shipments for the industry. Generally, all single-establishment companies with less than 5 employees were excused, while all establishments with more than 20 employees were mailed report forms.

Information on the physical location of the establishment, as well as information on payrolls, receipts (shipments), and industry classification, was obtained from the administrative records of other Federal agencies under special arrangements, which safeguarded their confidentiality. Estimates of data for these small establishments were developed using industry averages in conjunction with the administrative information. The value of shipments and cost of materials were not distributed among specific products and materials for these establishments but were included in the product and material "not specified by kind" (n.s.k.) categories.

The industry classification codes included in the administrative records files were assigned on the basis of brief descriptions of the general activity of the establishment. As a result, an indeterminate number of establishments were erroneously coded to the four-digit SIC level. This was especially true whenever there was a relatively fine line of demarcation between industries or between manufacturing and nonmanufacturing activity.

Sometimes these administrative record cases were given only a two- or three-digit SIC group. For the 1982 Census of Manufactures, these establishments were sent a separate classification form, which requested information on the products and services of the establishment. This form was used to code many of these establishments to the four-digit SIC level. Establishments that did not return the classification form were coded later to those four-digit SIC industries identified as "not elsewhere classified" (n.e.c.) within the given two- or three-digit industry groups.

As a result of these situations, a number of small establishments may have been misclassified by industry. However, such possible misclassifications have no significant effect on the statistics other than on the number of establishments.

The total establishment count for individual industries should be viewed as an approximation rather than a precise measurement. The counts for establishments with 20 employees or more are far more reliable than the count of total number of establishments.

2. Establishments Sent a Report Form

The 205,000 establishments covered in the mail canvass were divided into three groups:

a. ASM sample establishments—This group consisted of approximately 55,000 establishments covering all the units of large manufacturing establishments as well as a sample of the medium and smaller establishments. The probability of selection was proportionate to size (see appendix, Annual Survey of Manufactures).

In a census of manufactures year, the ASM report form (MA-1000) replaces the first page of the regular census form for those establishments included in the ASM. In addition to information on employment, payroll,

and other items normally requested on the regular census form, establishments in the ASM sample were requested to supply information on assets, capital expenditures, retirements, depreciation, rental payments, supplemental labor costs, and costs of purchased services. Results of the ASM inquiries are included in tables 3c and 3d of this report.

The census part of the report form is one of approximately 200 versions containing product, material, and special inquiries. The diversity of manufacturing activities necessitated the use of this many forms to canvass the approximately 450 manufacturing industries. Each form was developed for a group of related industries.

Appearing on each form was a list of products primary to the group of related industries, as well as secondary products and miscellaneous services that establishments classified in these industries were likely to be performing. Respondents were requested to identify the products, the value of each product, and, in a large number of cases, the quantity of the product shipped during the survey year. Space was also provided for the respondent to describe products not specifically identified on the form.

The report form also contained a materials-consumed inquiry, which varied from form to form depending on the industries being canvassed. The respondents were asked to review a list of materials generally used in their production processes. From this list, each establishment was requested to identify those materials consumed during the survey year, the cost of each, and, in certain cases, the quantity consumed. Once again, space was provided for the respondent to describe significant materials not identified on the form.

Finally, a wide variety of special inquiries was included to measure activities peculiar to a given industry, such as operations performed and equipment used.

b. Large and medium establishments (non-ASM)—

Approximately 100,000 establishments were included in this group. A variable cutoff, based on administrative records payroll data and determined on an industry-by-industry basis, was used to select those establishments that were to receive one of the approximately 200 census of manufactures regular forms. The first page, requesting establishment data for items such as employment and payroll, was standard but did not contain the detailed statistics included on the ASM form. The product, material, and special inquiry sections supplied were based on the historical industry classification of the establishment.

c. Small single-unit establishments (non-ASM)—

This group consisted of approximately 50,000 establishments. For those industries where application of the variable cutoff for administrative records cases resulted in a large number of small establishments being included in the mail canvass, an abbreviated or "short" form was used. These establishments received one of the approximately 80 versions of the short form, which requested summary product and material data and totals but no details on employment, payrolls, cost of materials, inventories, and capital expenditures.

Use of the short form has no adverse effect on published totals for the industry statistics; the same

data were collected on the short as well as the long form. However, detailed information on materials consumed was not collected on the short form; thus its use would increase the values of the n.s.k. categories.

Auxiliaries

In this industry report, the data on employment and payroll are limited to operating manufacturing establishments. The census report form filed for auxiliaries (ES-9200) requested a description of the activity of the establishments serviced. However, the auxiliaries were coded only to the two-digit major group of the establishments they served; whereas, the operating establishments were coded to a four-digit manufacturing industry. Data for the approximately 10,000 separately operated auxiliaries are included in the paperbound geographic area series, the bound volumes of the census of manufactures, and in a report issued as part of the 1982 Enterprise Statistics survey.

Auxiliaries are establishments whose employees are primarily engaged in performing supporting services for other establishments of the same company, rather than for the general public or for other business firms. They can be at different locations from the establishments served or at the same location as one of those establishments but not operating as an integral part thereof and serving two or more establishments. Where auxiliary operations are conducted at the same location as the manufacturing operation and operate as an integral part thereof, they usually are included in the report for the operating manufacturing establishment.

Included in the broad category of auxiliaries are administrative offices. Employees in administrative offices are concerned with the general management of multiestablishment companies, i.e., with the general supervision and control of two units or more, such as manufacturing plants, mines, sales branches, or stores. The functions of these employees may include (1) program planning, including sales research and coordination of purchasing, production, and distribution; (2) company purchasing, including general contracts and purchasing methods; (3) company financial policy and accounting, tax accounting, company sales and profit reports, and personnel accounting; (4) general engineering, including design of product machinery and equipment, and direction of engineering effort conducted at the individual operation locations; (5) direction of company personnel matters; and (6) legal and patent matters.

Other types of auxiliaries serving the plants or central management of the company include purchasing offices, sales promotion offices, research and development organizations, etc.

Industry Classification of Establishments

Each of the establishments covered in the census was classified in one of approximately 450 manufacturing industries in accordance with the industry definitions in the SIC system. Under this system of classification, an industry is generally defined as a group of establishments producing a single product or a closely related group of products. The product groupings from which industry classifications are derived are based on considerations such as similarity of manufacturing processes, types of materials used, types of customers, and the like. The resulting group of plants must be significant in terms of its number, value added by manufacture, value of shipments, and number of employees. The system operates in such a way that the definitions progressively became narrower with successive additions of numerical digits. There are 20 major groups (two-digit SIC), 143 industry groups (three-digit SIC), and approximately 450

industries (four-digit SIC). The product classes and products of the manufacturing industries have been assigned codes based on the industry from which they originate. There are about 1,500 classes of products, identified by a five-digit code, and about 11,000 products, identified by a seven-digit code. The seven-digit products are considered the primary products of the industry with the same four digits.

Accordingly, an establishment is usually classified in a particular industry on the basis of its major activity during a particular year, i.e., production of the products primary to that industry exceeds, in value, production of the products primary to any other single industry. In a few instances, however, the industry classification of an establishment is not only determined by the products it makes but also by the process employed in making those products. For example, establishments engaged in blast furnace operations, refining of nonferrous metals from ore, or rolling and drawing of nonferrous metals (processes which involve heavy capitalization in specialized equipment) would be classified according to the process used during a census year. These establishments then would be "frozen" in that industry during the following ASM years.

In either a census or ASM year, establishments included in the ASM sample with certainty weight, other than those involved with heavily capitalized activities described above, are reclassified by industry only if the change in the primary activity from the prior year is significant or the change has occurred for two successive years. This procedure prevents reclassification when there are minor shifts in product mix.

In ASM years, establishments included in the ASM sample with noncertainty weight are not shifted from one industry classification to another. They are retained in the industry where they were classified in the base census year (see appendix, Annual Survey of Manufactures). However, in the following census year, these ASM plants are allowed to shift from one industry to another.

The result of these rules covering the switching of plants from one industry classification to another is that, at the aggregate level, some industries comprise different mixes of establishments between survey years, and establishment data for such industry statistics as employment and payroll may be tabulated in different industries between survey years. Hence, comparisons between prior-year and current-year published totals, particularly at the four-digit SIC level, should be viewed with caution. This is true particularly for the comparison between the data shown for a census year versus the data shown for the previous ASM year.

As previously noted, the small establishments that may have been misclassified by industry are usually administrative-record cases whose industry codes were assigned on the basis of incomplete descriptions of the general activity of the establishment. Such possible misclassifications have no significant effect on the statistics other than on the number of establishments.

While some establishments produce only the primary products of the industry in which they are classified, all establishments of an industry rarely specialize to this extent. The industry statistics (employment, inventories, value added by manufacture, total value of shipments including resales and miscellaneous receipts, etc.) shown in tables 1a through 5a, therefore, reflect not only the primary activities of the establishments in that industry but also their secondary activities. The product statistics in tables 6a through 6c represent the output of all establishments whether or not they are classified in the same industry as the product. For this reason, in relating the industry statistics, especially the value of shipments to the product statistics, the

composition of the industry's output shown in table 5b should be considered.

The extent to which industry and product statistics may be matched with each other is measured by two ratios, which are computed from the figures shown in table 5b. The first of these ratios, called the primary product specialization ratio, measures the proportion of product shipments (both primary and secondary) of the establishments classified in the industry represented by the primary products of those establishments. The second ratio, called the coverage ratio, is the proportion of primary products shipped by the establishments classified in the industry to total shipments of such products by all manufacturing establishments.

However, establishments making products falling into the same industry category may use a variety of processes and materials to produce them. Also, the same industry classification (based on end products) may include both establishments that are highly integrated and those that put only the finishing touches on an already highly fabricated item. For example, the refrigeration industry includes instances of almost complete integration (production of the compressor, condensing unit, electric motor, casting, stamping of the case, and final assembly) all carried on at one plant. On the other hand, the condensing unit, the motor, and the case may be purchased and only assembled into the finished product.

In some instances, separate industry categories have been established for integrated and nonintegrated establishments. For other industries, the census provides separate statistics on the production of intermediate commodities made and used in the producing plant. For some industries characterized by many plants of the same company, separate figures on interplant transfer of products usually are shown.

Differences in the integration of production processes, types of operations, and alternatives in types of materials used should be considered when relating the industry statistics (employment, payrolls, value added, etc.) to the product and material data.

Value of Shipments for the Industry Compared With Value of Product Shipments

This industry report shows value of shipments data for industries and products. In tables 1a through 5a, these data represent the total value of shipments of all establishments classified in a particular industry. The data include the shipments of the products classified in the industry (primary to the industry), products classified in other industries (secondary to the industry), and miscellaneous receipts (repair work, sale of scrap, research and development, installation receipts, and resales). Product shipments shown in table 6a represent the total value of shipments of products classified as primary to an industry that were shipped by all manufacturing establishments regardless of their industry classification.

CENSUS DISCLOSURE RULES

In accordance with Federal law governing census reports, no data are published that would disclose the data for an individual establishment or company. However, the number of establishments classified in a specific industry is not considered a disclosure, so this item may be given even though other information is withheld.

The disclosure analysis for the industry statistics in tables 1a through 5a of this report is based on the total value of shipments. When the total value of shipments cannot be shown without disclosing information for individual companies, the complete line has been suppressed. However, the suppressed data are included in higher level totals. Additional disclosure analysis is performed for new capital expenditures that can be suppressed even though value of shipments data are publishable.

MICROFICHE AND COMPUTER TAPES

All the data in this report are available on microfiche. Selected data are also available on computer tape.

In addition to selected published data being on computer tape, one major data series, the location of manufacturing plants, will be available only on computer tape. This series presents the number of establishments by employment size class by four-digit SIC industry codes for States, counties, and places of 2,500 inhabitants or more. These data are available for both State and county by industry, and State and place by industry.

Microfiche reports are sold by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Computer tapes are sold by the Data User Services Division, Customer Services (Tapes), Bureau of the Census, Washington, D.C. 20233.

SPECIAL TABULATIONS

Special tabulations of data collected in the 1982 Census of Manufactures may be obtained on computer tape or in tabular form. The data will be in summary form and subject to the same rules prohibiting disclosure of confidential information (including name, address, kind of business, or other data for individual business establishments or companies) as are the regular publications.

Special tabulations are prepared on a cost basis. A request for a cost estimate, as well as exact specifications on the type and format of the data to be provided, should be directed to the Chief, Industry Division, Bureau of the Census, Washington, D.C. 20233.

ABBREVIATIONS AND SYMBOLS

The following abbreviations and symbols are used in this publication:

- Represents zero.
- (D) Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
- (NA) Not available.
- (NC) Not comparable.
- (S) Withheld because estimate did not meet publication standards on the basis of either the response rate or a consistency review.
- (X) Not applicable.
- (Z) Less than half the unit shown.
- n.e.c. Not elsewhere classified.
- n.s.k. Not specified by kind.
- pt. Part.
- r Revised.
- SIC Standard Industrial Classification.

Other abbreviations, such as lb, gal, yd, doz, bbl, and s tons, are used in the customary sense.

Users' Guide for Locating Statistics

[For explanation of terms, see appendixes]

	Item	Four-digit industry statistics		
		Historical	Operating ratios	By geographic area
1	Number of companies	1a		
2	Number of manufacturing establishments	1a		2
	Employment and payroll:			
3	Number of employees	1a	1b	2
4	Payroll	1a	1b	2
5	Supplemental labor costs			
6	Production workers	1a	1b	2
7	Production-worker hours	1a	1b	2
8	Production-worker wages	1a	1b	2
	Shipments, cost of materials, and value added:			
9	Value of shipments (four-digit)	1a	1b	2
10	Product class shipments (five-digit)			
11	Product shipments (seven-digit)			
12	Value added by manufacture	1a	1b	2
13	Cost of materials	1a	1b	2
14	Fuels and electric energy			
15	Materials consumed by kind			
	Inventories:			
16	Total, end of year	1a		
17	By method of valuation			
18	By stage of fabrication			
	Capital expenditures, assets, rental payments, and purchased services:			
19	New capital expenditures	1a		2
20	Used plant and equipment expenditures			
21	Gross assets			
22	Depreciation			
23	Retirements of buildings and machinery			
24	Rental payments			
25	Purchased services			
	Ratios:			
26	Specialization	1a		
27	Coverage	1a		

*Number of companies with shipments of over \$100 thousand.

**Detailed information shown.

In This Report by Table Number

Four-digit industry statistics—Con.				Five-digit product class and seven-digit product statistics				
Summary and supplemental	By employment size	By industry and product class specialization	Materials consumed by kind	Industry-product analysis	Product shipments	Product class by geographic area	Historical product class	
3a					*6a			1
**3a	4	5a						2
3a	4	5a						3
3a	4	5a						4
**3d								5
**3a	4	5a						6
**3a	4	5a						7
3a	4	5a						8
3a	4	5a		5b, 5c				9
				5b, 5c	6a	6b	6c	10
					6a			11
3a	4	5a						12
**3a	4	5a						13
3a, 3d			7					14
								15
3b, 3c	4							16
3b, 3c								17
3b								18
**3a, **3d	4	5a						19
**3a, **3d								20
**3d								21
**3d								22
**3d								23
**3d								24
**3d								25
3a				5b				26
3a				5b				27



Ship and Boat Building, Railroad and Miscellaneous Transportation Equipment

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DESCRIPTION OF INDUSTRIES AND SUMMARY OF FINDINGS

SHIP AND BOAT BUILDING, RAILROAD AND MISCELLANEOUS TRANSPORTATION EQUIPMENT

This report shows 1982 Census of Manufactures statistics for establishments classified in each of the following industries:

SIC Code and Title

3731	Ship Building and Repairing
3732	Boat Building and Repairing
3743	Railroad Equipment
3751	Motorcycles, Bicycles, and Parts
3792	Travel Trailers and Campers
3795	Tanks and Tank Components
3799	Transportation Equipment, N.E.C.

The industry statistics (employment, payroll, cost of materials, value of shipments, inventories, etc.) are reported for each establishment as a whole. Aggregates of such data for an industry reflect not only the primary activities of the establishments but also their activities in the manufacture of secondary products as well as their miscellaneous activities (contract work on materials owned by others, repair work, etc.). This fact should be taken into account in comparing industry statistics (tables 1a-5a) with product statistics (table 6a) showing shipments by all industries of the primary products of the specified industry. The extent of the "product mix" is indicated in table 5b, which shows the value of primary and secondary products shipped by establishments classified in the specified industry and the value of primary products of the industry shipped as secondary products by establishments classified in other industries.

Small single-unit companies with up to 20 employees (cutoff varied by industry) were excluded from the mail portion of the census. For these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated), data on payrolls and receipts were obtained from administrative records of other government agencies. The remaining statistics were developed from industry averages.

Establishment data were tabulated based on industry definitions contained in the 1972 Standard Industrial Classification (SIC) Manual and its 1977 supplement.¹

INDUSTRY 3731, SHIP BUILDING AND REPAIRING

This industry comprises establishments primarily engaged in building and repairing all types of ships, barges, and lighters, whether propelled by sail or motor power or towed by other craft. This industry also includes the conversion and alteration of ships. Establishments primarily engaged in fabricating structural assemblies or components for ships, or subcontractors engaged

in ship painting, joinery, carpentry work, electrical wiring installation, etc., are classified in other industries.

In the 1982 Census of Manufactures, Industry 3731, Ship Building and Repairing, recorded employment of 166.9 thousand. The total value of shipments for establishments classified in this industry was \$10,979 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 5 percent below the 176.4 thousand reported in 1977. The leading States in employment in 1982 were Virginia, Louisiana, Connecticut, and California, accounting for approximately 50 percent of the industry's 1982 employment. Data for Virginia and Connecticut have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when Virginia, Mississippi, Connecticut, and Louisiana accounted for approximately 25 percent of the industry's employment.

Compared with 1981, employment decreased 7 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3731 shipped \$10,583 million of products primary to the industry, \$153 million of secondary products, and had \$243 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 99 percent (specialization ratio). In 1977, this specialization ratio was 97 percent.

Establishments in this industry also accounted for 99 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio also was 99 percent. The products primary to industry 3731, no matter in what industry they were produced, appear in table 6a and aggregate to \$10,655 million in current prices.

The total cost of materials and services used by establishments classified in the ship building and repairing industry amounted to \$4,594 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 20 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of total value of shipments.

¹Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 041-001-00066-6. 1977 Supplement. Stock No. 003-005-00176-0.

INDUSTRY 3732, BOAT BUILDING AND REPAIRING

This industry comprises establishments primarily engaged in building and repairing all types of boats. Establishments primarily engaged in cleaning and storing boats and in the rental of dock space, and yacht clubs are classified in nonmanufacturing industries. Establishments primarily engaged in the manufacture of rubber and nonrigid plastic boats are classified in major group 30.

In the 1982 Census of Manufactures, Industry 3732, Boat Building and Repairing, recorded employment of 38.2 thousand. The total value of shipments for establishments classified in this industry was \$2,347 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 13 percent below the 43.8 thousand reported in 1977. The leading States in employment in 1982 were Florida, California, Washington, and Michigan, accounting for approximately 43 percent of the industry's 1982 employment. This represents a shift from 1977 when Florida, California, Washington, and Texas accounted for approximately 45 percent of the industry's employment.

Compared with 1981, employment decreased 6 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3732 shipped \$2,225 million of products primary to the industry, \$44 million of secondary products, and had \$78 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 98 percent (specialization ratio). In 1977, this specialization ratio also was 98 percent.

Establishments in this industry also accounted for 96 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 96 percent. The products primary to industry 3732, no matter in what industry they were produced, appear in table 6a and aggregate to \$2,307 million in current prices.

The total cost of materials and services used by establishments classified in the boat building and repairing industry amounted to \$1,229 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 5 percent of total value of shipments.

INDUSTRY 3743, RAILROAD EQUIPMENT

This industry comprises establishments primarily engaged in building and rebuilding locomotives (including frames and parts,

not elsewhere classified) of any type or gage; and railroad, street, and rapid transit cars and car equipment for operation on rails for freight and passenger service. This industry also includes establishments primarily engaged in the manufacture of trackless trolley buses. Establishments primarily engaged in the manufacture of mining cars are classified in industry 3532. Repair shops owned and operated by railroads or local transit companies rebuilding or repairing locomotives or cars, or building new locomotives or cars for their own account, are classified in major groups 40 and 41.

In the 1982 Census of Manufactures, Industry 3743, Railroad Equipment, recorded employment of 34.5 thousand. The total value of shipments for establishments classified in this industry was \$3,457 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 39 percent below the 56.3 thousand reported in 1977. The leading States in employment in 1982 were Pennsylvania, Illinois, Ohio, and Texas, accounting for approximately 75 percent of the industry's 1982 employment. Data for Texas have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when Pennsylvania, Illinois, Ohio, and Indiana accounted for approximately 70 percent of the industry's employment.

Compared with 1981, employment decreased 29 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3743 shipped \$2,750 million of products primary to the industry, \$481 million of secondary products, and had \$226 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 85 percent (specialization ratio). In 1977, this specialization ratio was 91 percent.

Establishments in this industry also accounted for 96 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 94 percent. The products primary to industry 3743, no matter in what industry they were produced, appear in table 6a and aggregate to \$2,750 million in current prices.

The total cost of materials and services used by establishments classified in the railroad equipment industry amounted to \$1,771 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 20 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of total value of shipments.

INDUSTRY 3751, MOTORCYCLES, BICYCLES, AND PARTS

This industry comprises establishments primarily engaged in the manufacture of motorcycles, bicycles, and similar equipment and parts. This industry also includes establishments primarily engaged in assembling motorcycles or bicycles from purchased parts. Establishments primarily engaged in the manufacture of children's vehicles, except bicycles, are classified in industry 3944, and those manufacturing golf carts and other similar personnel carriers in industry 3799.

In the 1982 Census of Manufactures, Industry 3751, Motorcycles, Bicycles, and Parts, recorded employment of 13.0 thousand. The total value of shipments for establishments classified in this industry was \$1,341 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 17 percent below the 15.6 thousand reported in 1977. The leading States in employment in 1982 were Tennessee, Pennsylvania, California, and Ohio, accounting for approximately 64 percent of the industry's 1982 employment. Data for Tennessee, Pennsylvania, and Ohio have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when Tennessee, California, Illinois, and Pennsylvania accounted for approximately 65 percent of the industry's employment.

Compared with 1981, employment decreased 6 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3751 shipped \$1,096 million of products primary to the industry, \$200 million of secondary products, and had \$45 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 85 percent (specialization ratio). In 1977, this specialization ratio also was 84 percent.

Establishments in this industry also accounted for 96 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 97 percent. The products primary to industry 3751, no matter in what industry they were produced, appear in table 6a and aggregate to \$1,143 million in current prices.

The total cost of materials and services used by establishments classified in the motorcycles, bicycles, and parts industry amounted to \$889 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 3 percent of total value of shipments.

INDUSTRY 3792, TRAVEL TRAILERS AND CAMPERS

This industry comprises establishments primarily engaged in the manufacture of travel trailers for attachment to passenger cars or other vehicles and pickup coaches (campers) or caps (covers) for mounting on pickup trucks. Establishments primarily engaged in the manufacture of mobile homes are classified in industry 2451.

In the 1982 Census of Manufactures, Industry 3792, Travel Trailers and Campers, recorded employment of 13.8 thousand. The total value of shipments for establishments classified in this industry was \$1,281 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 48 percent below the 26.3 thousand reported in 1977. The leading States in employment in 1982 were Indiana, California, Pennsylvania, and Texas, accounting for approximately 65 percent of the industry's 1982 employment. Data for California have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when Indiana, California, Michigan, and Texas accounted for approximately 60 percent of the industry's employment.

Compared with 1981, employment decreased 10 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3792 shipped \$1,052 million of products primary to the industry, \$147 million of secondary products, and had \$81 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 88 percent (specialization ratio). In 1977, this specialization ratio was 88 percent.

Establishments in this industry also accounted for 97 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 90 percent. The products primary to industry 3792, no matter in what industry they were produced, appear in table 6a and aggregate to \$1,088 million in current prices.

The total cost of materials and services used by establishments classified in the travel trailers and campers industry amounted to \$838 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 3 percent of total value of shipments.

INDUSTRY 3795, TANKS AND TANK COMPONENTS

This industry comprises establishments primarily engaged in the manufacture of complete tanks and other full-tracked military vehicles, and weapons carriers. Establishments primarily engaged in the manufacture of military vehicles other than tanks are classified in industry group 371, and tank engines in industry 3519.

In the 1982 Census of Manufactures, Industry 3795, Tanks and Tank Components, recorded employment of 18.1 thousand. The total value of shipments for establishments classified in this industry was \$2,344 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 46 percent above the 12.4 thousand reported in 1977. The leading States in employment in 1982 were California, Pennsylvania, Michigan, and Ohio, accounting for approximately 87 percent of the industry's 1982 employment. Data for these States have been withheld to avoid disclosing data for individual companies. This represents a shift from 1977 when Pennsylvania, Indiana, Michigan, and California accounted for approximately 90 percent of the industry's employment.

Compared with 1981, employment increased 27 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

The products primary to industry 3795, no matter in what industry they were produced, appear in table 6a and aggregate to \$2,344 million in current prices.

The total cost of materials and services used by establishments classified in the tanks and tank components industry amounted to \$1,503 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 20 employees were excluded from the mail portion of the census. There were no establishments for which administrative records were used for this industry. A small number of larger establishments whose reports were not received at the time the data were tabulated were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 1 percent of total value of shipments.

INDUSTRY 3799, TRANSPORTATION EQUIPMENT, N.E.C.

This industry comprises establishments primarily engaged in the manufacture of transportation equipment, n.e.c., such as

automobile trailers, snowmobiles, selfpropelled golf carts and similar vehicles. Establishments primarily engaged in the manufacture of industrial trucks, tractors, trailers, and stackers are classified in industry 3537; and children's vehicles, except bicycles, in industry 3944.

In the 1982 Census of Manufactures, Industry 3799, Transportation Equipment, N.E.C., recorded employment of 10.7 thousand. The total value of shipments for establishments classified in this industry was \$886 million.

The value of shipments figure shown above is in current (1982) prices. All dollar figures included in this report are at prices current for the year specified and, therefore, unadjusted for changes in price levels. Consequently, when making comparisons to prior years, users should take into consideration the inflation that has occurred.

The employment figure shown above was 4 percent above the 10.3 thousand reported in 1977. The leading States in employment in 1982 were Texas, Georgia, Minnesota, and California, accounting for approximately 34 percent of the industry's 1982 employment. Data for Georgia and California have been withheld to avoid disclosing data for individual companies. These same States were the leaders in 1977, when they accounted for approximately 45 percent of the industry's employment, although there has been some shift in the relative importance of individual States.

Compared with 1981, employment increased 24 percent. The 1981 data are based on the Bureau's annual survey of manufactures (ASM), which is a sample survey conducted each year between censuses.

Establishments in virtually all industries ship secondary products as well as products primary to the industry to which they are classified and have some miscellaneous receipts, such as resales and contract receipts. In current prices, industry 3799 shipped \$783 million of products primary to the industry, \$65 million of secondary products, and had \$38 million of miscellaneous receipts. Thus, the ratio of primary products to the total of both secondary and primary products shipped by establishments in the industry was 92 percent (specialization ratio). In 1977, this specialization ratio was 94 percent.

Establishments in this industry also accounted for 82 percent of products considered primary to the industry no matter where they actually were produced (coverage ratio). In 1977, the coverage ratio was 79 percent. The products primary to industry 3799, no matter in what industry they were produced, appear in table 6a and aggregate to \$954 million in current prices.

The total cost of materials and services used by establishments classified in the transportation equipment, n.e.c., industry amounted to \$511 million in current prices. Data on specific materials consumed appear in table 7.

Establishments of single-unit companies in this industry with up to 10 employees were excluded from the mail portion of the census. The data for these establishments (and a small number of larger establishments whose reports were not received at the time the data were tabulated) were obtained from administrative records of other agencies or developed from industry averages. These establishments accounted for 3 percent of total value of shipments.

Table 1a. Historical Statistics for the Industry: 1982 and Earlier Years

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year¹	All establishments³			All employees		Production workers			Value added by manufacture⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories⁴ (million dollars)	Ratios	
	Companies² (no.)	Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization (percent)	Coverage (percent)
INDUSTRY 3731, SHIP BUILDING AND REPAIRING															
1982 Census.....	616	690	379	166.9	3 740.7	130.8	259.6	2 773.7	*6 385.6	4 593.6	*10 979.2	438.8	1 355.1	99	99
1981 ASM.....	(NA)	(NA)	(NA)	178.9	3 766.9	142.2	287.5	2 807.9	6 303.7	4 697.6	11 001.3	379.9	1 516.3	(NA)	(NA)
1980 ASM.....	(NA)	(NA)	(NA)	177.3	3 360.4	141.8	281.4	2 467.0	5 337.6	3 930.9	9 268.5	267.5	1 541.2	(NA)	(NA)
1979 ASM.....	(NA)	(NA)	(NA)	171.0	2 927.6	136.7	268.1	2 131.8	4 586.9	3 151.6	7 738.5	235.7	1 303.9	(NA)	(NA)
1978 ASM.....	(NA)	(NA)	(NA)	174.1	2 647.5	138.4	268.4	1 936.2	4 106.5	2 836.8	6 943.4	189.4	1 269.1	(NA)	(NA)
1977 Census.....	542	605	314	176.4	2 494.0	139.9	277.2	1 807.4	3 825.0	2 670.1	6 495.1	161.3	1 072.5	97	99
1976 ASM.....	(NA)	(NA)	(NA)	166.3	2 219.5	132.1	261.6	1 618.6	3 287.3	2 610.2	5 895.8	354.6	1 053.1	(NA)	(NA)
1975 ASM.....	(NA)	(NA)	(NA)	166.9	1 995.6	133.4	253.9	1 460.8	2 923.2	2 692.1	5 615.3	297.9	1 137.3	(NA)	(NA)
1974 ASM.....	(NA)	(NA)	(NA)	162.2	1 769.5	129.0	249.5	1 291.0	2 547.3	2 264.1	4 825.0	215.5	1 032.5	(NA)	(NA)
1973 ASM.....	(NA)	(NA)	(NA)	152.1	1 560.2	120.6	239.0	1 134.2	2 216.1	1 742.6	3 958.7	131.0	932.1	(NA)	(NA)
1972 Census.....	415	455	277	144.6	1 422.3	117.7	233.4	1 053.2	1 881.3	1 399.7	3 281.0	142.0	721.3	98	98
1971 ASM.....	(NA)	(NA)	(NA)	128.4	1 179.9	104.7	207.9	879.5	1 575.3	1 186.3	2 761.5	89.0	547.9	(NA)	(NA)
1970 ASM.....	(NA)	(NA)	(NA)	133.4	1 161.2	108.5	212.8	869.7	1 609.8	1 074.6	2 682.4	144.8	441.6	(NA)	(NA)
1969 ASM.....	(NA)	(NA)	(NA)	142.9	1 212.4	117.7	235.3	926.6	1 451.3	1 108.4	2 559.7	88.1	503.6	(NA)	(NA)
1968 ASM.....	(NA)	(NA)	(NA)	142.0	1 133.1	117.5	232.6	867.3	1 345.9	1 142.3	2 488.3	75.9	558.1	(NA)	(NA)
1967 Census.....	389	415	253	138.8	1 076.0	114.2	231.0	819.4	1 430.4	1 087.8	2 518.2	70.3	800.3	95	98
INDUSTRY 3732, BOAT BUILDING AND REPAIRING															
1982 Census.....	1 833	1 876	384	38.2	585.2	30.7	59.7	420.3	1 123.0	1 229.1	2 347.2	57.5	462.0	98	96
1981 ASM.....	(NA)	(NA)	(NA)	40.7	562.2	33.0	63.2	401.3	1 057.3	1 215.0	2 247.9	65.9	427.4	(NA)	(NA)
1980 ASM.....	(NA)	(NA)	(NA)	41.3	517.0	33.1	62.2	369.9	930.4	1 157.2	2 102.2	61.9	377.9	(NA)	(NA)
1979 ASM.....	(NA)	(NA)	(NA)	46.5	532.3	37.8	72.0	385.5	998.5	1 251.9	2 233.4	62.5	393.5	(NA)	(NA)
1978 ASM.....	(NA)	(NA)	(NA)	49.9	520.7	41.1	77.4	382.8	1 015.8	1 161.5	2 162.1	60.0	380.7	(NA)	(NA)
1977 Census.....	2 148	2 190	422	43.8	445.8	35.6	68.4	324.7	856.3	984.7	1 822.6	42.3	338.0	98	96
1976 ASM.....	(NA)	(NA)	(NA)	40.6	385.2	33.3	62.2	296.8	745.1	871.0	1 620.6	32.4	257.1	(NA)	(NA)
1975 ASM.....	(NA)	(NA)	(NA)	35.4	309.5	28.6	52.8	234.7	629.0	671.7	1 321.0	31.3	197.8	(NA)	(NA)
1974 ASM.....	(NA)	(NA)	(NA)	38.2	274.1	31.0	57.6	207.1	514.0	560.3	1 099.8	24.4	189.8	(NA)	(NA)
1973 ASM.....	(NA)	(NA)	(NA)	44.3	311.5	36.7	67.8	231.2	563.6	628.0	1 181.5	28.5	240.5	(NA)	(NA)
1972 Census.....	1 726	1 777	368	40.6	281.3	33.6	64.0	212.4	516.8	552.0	1 048.2	37.2	209.7	97	96
1971 ASM.....	(NA)	(NA)	(NA)	30.3	198.3	24.4	47.1	148.5	353.9	377.7	741.8	19.0	157.8	(NA)	(NA)
1970 ASM.....	(NA)	(NA)	(NA)	30.9	189.1	25.2	49.2	141.3	330.0	353.0	673.0	17.3	103.6	(NA)	(NA)
1969 ASM.....	(NA)	(NA)	(NA)	38.5	233.0	32.8	65.1	184.0	388.0	411.5	781.0	31.3	161.5	(NA)	(NA)
1968 ASM.....	(NA)	(NA)	(NA)	32.3	185.6	27.7	56.5	147.1	321.2	325.9	639.1	12.3	136.7	(NA)	(NA)
1967 Census.....	1 565	1 596	287	30.5	163.0	26.2	51.8	128.1	274.8	298.4	571.4	15.8	115.8	96	91
INDUSTRY 3743, RAILROAD EQUIPMENT															
1982 Census.....	158	200	107	34.5	790.4	22.8	38.9	478.7	1 491.8	1 770.5	3 456.6	142.3	775.7	85	96
1981 ASM.....	(NA)	(NA)	(NA)	48.6	1 094.1	34.1	62.1	728.1	2 301.6	2 953.2	5 419.9	139.5	920.2	(NA)	(NA)
1980 ASM.....	(NA)	(NA)	(NA)	65.2	1 365.3	49.0	90.4	985.2	3 217.0	4 384.4	7 808.7	167.8	1 151.1	(NA)	(NA)
1979 ASM.....	(NA)	(NA)	(NA)	72.0	1 373.8	56.4	108.4	1 017.3	3 462.2	4 416.3	7 756.4	154.3	1 440.2	(NA)	(NA)
1978 ASM.....	(NA)	(NA)	(NA)	62.1	1 074.7	47.8	91.3	768.1	2 480.8	3 135.4	5 459.5	115.5	1 118.6	(NA)	(NA)
1977 Census.....	145	201	118	56.3	888.6	42.6	79.4	619.9	1 882.8	2 386.2	4 278.3	80.4	850.6	91	94
1976 ASM.....	(NA)	(NA)	(NA)	50.5	740.2	37.6	69.4	510.0	1 454.8	2 077.0	3 615.6	67.5	756.8	(NA)	(NA)
1975 ASM.....	(NA)	(NA)	(NA)	59.6	797.9	46.3	87.0	578.4	1 566.4	2 625.3	4 221.5	73.4	868.2	(NA)	(NA)
1974 ASM.....	(NA)	(NA)	(NA)	60.1	735.4	47.6	92.5	550.0	1 602.6	2 165.1	3 538.9	67.7	878.7	(NA)	(NA)
1973 ASM.....	(NA)	(NA)	(NA)	52.8	596.0	40.6	78.3	424.6	1 245.5	1 563.1	2 771.2	47.4	555.1	(NA)	(NA)
1972 Census.....	127	163	103	50.8	529.1	38.4	72.7	371.9	1 113.3	1 134.2	2 446.2	55.3	459.3	92	95
1971 ASM.....	(NA)	(NA)	(NA)	53.2	512.0	40.7	78.2	363.3	1 018.3	1 372.3	2 363.9	65.7	470.1	(NA)	(NA)
1970 ASM.....	(NA)	(NA)	(NA)	53.7	479.1	41.5	79.6	343.2	878.4	1 323.6	2 178.9	48.6	441.7	(NA)	(NA)
1969 ASM.....	(NA)	(NA)	(NA)	54.4	470.6	42.9	85.7	347.3	915.9	1 364.7	2 259.7	49.2	426.5	(NA)	(NA)
1968 ASM.....	(NA)	(NA)	(NA)	48.3	386.0	36.9	72.9	274.2	725.3	1 022.5	1 723.1	33.4	397.4	(NA)	(NA)
1967 Census.....	109	123	85	56.6	426.7	44.4	86.3	313.9	787.9	1 298.2	2 110.5	40.4	389.2	(NA)	94
INDUSTRY 3751, MOTORCYCLES, BICYCLES, AND PARTS															
1982 Census.....	269	273	67	13.0	224.9	10.4	19.0	168.8	402.5	888.9	1 341.1	23.1	285.5	85	96
1981 ASM.....	(NA)	(NA)	(NA)	13.9	222.5	11.2	21.5	168.1	426.7	904.0	1 344.0	26.8	278.2	(NA)	(NA)
1980 ASM.....	(NA)	(NA)	(NA)	15.2	217.2	12.7	24.0	165.4	475.1	867.5	1 336.7	22.0	280.0	(NA)	(NA)
1979 ASM.....	(NA)	(NA)	(NA)	16.9	225.6	14.4	28.2	178.7	454.3	929.5	1 374.8	29.5	295.2	(NA)	(NA)
1978 ASM.....	(NA)	(NA)	(NA)	17.2	199.8	14.7	26.8	152.9	428.1	824.0	1 224.6	27.2	259.7	(NA)	(NA)
1977 Census.....	343	350	63	15.6	168.9	13.3	24.6	129.9	369.8	660.1	1 007.6	24.1	226.5	84	97
1976 ASM.....	(NA)	(NA)	(NA)	13.7	151.2	11.4	20.5	111.4	284.0	516.2	790.5	16.5	184.7	(NA)	(NA)
1975 ASM.....	(NA)	(NA)	(NA)	14.0	147.6	11.1	20.7	106.8	254.4	501.6	785.7	15.8	176.6	(NA)	(NA)
1974 ASM.....	(NA)	(NA)	(NA)	19.1	171.8	16.2	30.6	130.6	410.9	590.4	958.6	24.9	231.8	(NA)	(NA)
1973 ASM.....	(NA)	(NA)	(NA)	17.5	145.8	15.1	29.1	113.0	309.3	421.0	721.7	15.9	140.8	(NA)	(NA)
1972 Census.....	219	222	52	17.6	139.6	15.0	29.1	106.2	315.2	373.0	659.5	16.0	128.8	81	95
1971 ASM.....	(NA)	(NA)	(NA)	13.7	105.8	11.4	22.2	79.1	217.1	256.6	469.6	8.1	99.5	(NA)	(NA)
1970 ASM.....	(NA)	(NA)	(NA)	14.8	99.0	12.0	22.2	73.1	186.2	245.0	425.5	7.3	96.2	(NA)	(NA)
1969 ASM.....	(NA)	(NA)	(NA)	12.7	83.6	10.4	20.0	61.3	146.4	202.0	346.7	8.1	77.2	(NA)	(NA)
1968 ASM.....	(NA)	(NA)	(NA)	12.6	79.2	10.6	20.9	59.2	165.8	191.5	345.9	9.1	73.0	(NA)	(NA)
1967 Census.....	87	91	33	12.0	70.3	10.1	19.1	53.4	136.2	170.6	299.6	5.5	60.3	89	96
INDUSTRY 3792, TRAVEL TRAILERS AND CAMPERS															
1982 Census.....	446	492	142	13.8	221.6	11.2	20.4	149.8	441.8	837.5	1 280.8	16.9	136.5	88	97
1981 ASM.....	(NA)	(NA)	(NA)	15.4	212.2	12.5	22.5	139.4	384.7	733.6	1 112.9	12.4	140.0	(NA)	(NA)
1980 ASM.....	(NA)	(NA)	(NA)	15.0	184.8	11.6	21.1	119.6	307.8	605.4	928.8	13.2	141.4	(NA)	(NA)
1979 ASM.....	(NA)	(NA)	(NA)	19.2	222.3	15.0	27.1	147.0	377.1	748.6	1 150.0	26.5	177.5	(NA)	(NA)</

Table 1a. Historical Statistics for the Industry: 1982 and Earlier Years—Con.

[Excludes data for auxiliaries. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year ¹	Companies ² (no.)	All establishments ³		All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories ⁴ (million dollars)	Ratios	
		Total (no.)	With 20 employees or more (no.)	Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						Specialization (percent)	Coverage (percent)
INDUSTRY 3795, TANKS AND TANK COMPONENTS															
1982 Census.....	37	43	36	18.1	473.9	12.5	23.1	289.6	1 153.6	1 503.3	2 343.7	114.5	918.4	(D)	79
1981 ASM.....	(NA)	(NA)	(NA)	14.2	328.0	10.5	18.9	221.6	1 043.1	826.7	1 657.6	35.1	588.9	(NA)	(NA)
1980 ASM.....	(NA)	(NA)	(NA)	13.3	284.0	10.1	19.3	199.4	647.6	862.4	1 419.2	36.8	373.3	(NA)	(NA)
1979 ASM.....	(NA)	(NA)	(NA)	13.4	233.7	10.9	19.3	171.4	531.1	598.1	1 030.3	23.9	296.6	(NA)	(NA)
1978 ASM.....	(NA)	(NA)	(NA)	13.4	225.0	10.7	20.8	166.9	379.9	628.2	1 092.5	17.1	190.8	(NA)	(NA)
1977 Census.....	20	24	18	12.4	208.5	10.0	19.8	156.2	437.6	590.0	934.2	13.2	287.8	92	82
1978 ASM.....	(NA)	(NA)	(NA)	9.8	146.0	7.7	15.5	110.9	305.7	467.3	720.3	9.4	171.2	(NA)	(NA)
1975 ASM.....	(NA)	(NA)	(NA)	8.4	112.7	6.8	13.5	86.0	258.4	279.5	504.0	2.3	118.4	(NA)	(NA)
1974 ASM.....	(NA)	(NA)	(NA)	7.7	103.6	5.9	12.2	75.6	205.4	195.1	362.3	1.5	83.5	(NA)	(NA)
1973 ASM.....	(NA)	(NA)	(NA)	6.3	75.4	5.0	10.1	55.4	135.8	187.9	321.8	3.5	36.9	(NA)	(NA)
1972 Census.....	18	22	15	5.9	65.0	4.6	9.0	46.9	111.7	150.1	272.2	3.1	35.8	95	77
1971 ASM.....	(NA)	(NA)	(NA)	7.3	72.4	5.1	10.1	44.9	181.1	193.8	345.2	3.0	65.6	(NA)	(NA)
1970 ASM.....	(NA)	(NA)	(NA)	8.1	76.0	5.3	10.7	46.4	139.5	208.4	360.1	3.2	35.7	(NA)	(NA)
1969 ASM.....	(NA)	(NA)	(NA)	9.6	89.7	6.4	13.5	57.4	142.1	238.5	421.8	1.2	72.5	(NA)	(NA)
1968 ASM.....	(NA)	(NA)	(NA)	12.6	108.8	9.2	18.7	71.6	180.6	333.4	506.4	2.8	97.2	(NA)	(NA)
1967 Census.....	23	27	21	13.2	101.4	10.0	20.7	68.1	144.7	263.4	394.1	3.3	87.9	85	76
INDUSTRY 3799, TRANSPORTATION EQUIPMENT, N.E.C.															
1982 Census.....	407	424	119	10.7	178.6	7.4	14.2	101.9	372.4	510.9	886.2	14.8	170.7	93	82
1981 ASM.....	(NA)	(NA)	(NA)	8.6	124.0	5.9	11.8	72.5	224.9	402.0	620.7	¹⁵ 15.1	109.4	(NA)	(NA)
1980 ASM.....	(NA)	(NA)	(NA)	9.3	124.1	6.6	13.0	74.4	208.0	397.4	607.9	18.0	105.1	(NA)	(NA)
1979 ASM.....	(NA)	(NA)	(NA)	10.7	129.0	8.0	15.5	83.2	211.8	472.5	683.0	15.2	107.8	(NA)	(NA)
1978 ASM.....	(NA)	(NA)	(NA)	11.4	122.7	8.4	15.1	79.3	248.8	441.8	687.0	¹⁹ 19.6	112.2	(NA)	(NA)
1977 Census.....	408	429	109	10.3	106.6	7.4	13.3	62.6	232.7	384.9	620.9	9.8	109.4	94	79
1976 ASM.....	(NA)	(NA)	(NA)	15.2	154.1	11.6	20.0	95.8	379.8	538.9	905.3	15.2	167.9	(NA)	(NA)
1975 ASM.....	(NA)	(NA)	(NA)	14.1	131.1	10.5	19.6	83.7	312.7	483.0	808.7	15.3	155.8	(NA)	(NA)
1974 ASM.....	(NA)	(NA)	(NA)	15.8	124.6	12.2	20.5	81.7	320.9	459.7	764.1	26.2	176.9	(NA)	(NA)
1973 ASM.....	(NA)	(NA)	(NA)	18.0	135.6	13.8	27.7	90.3	293.4	439.1	706.3	16.9	153.5	(NA)	(NA)
1972 Census ⁶	444	501	192	16.1	117.2	13.4	25.2	82.0	232.1	434.2	654.6	16.9	113.5	93	74

¹In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1967, see 1967 Census of Manufactures, vol. II, table 1 of the Industry chapter.

²For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

³Includes establishments with payroll at any time during year.

⁴Effective with the 1982 Economic Censuses, uniform instructions for reporting inventories were introduced for all sector reports. Up to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Because of this change in reporting instructions, the 1982 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown above and in historical census of manufactures and annual survey of manufactures publications. Inventories and value added data estimated on a basis comparable to the historical data, using the reported information for 1982, are shown below:

Industries	End-of-1981 inventories (million dollars)	End-of-1982 inventories (million dollars)	1982 value added by manufacture (million dollars)
Industry 3731, Ship building and repairing	1 667.9	1 348.9	56 385.6
Industry 3732, Boat building and repairing	432.8	446.7	1 125.7
Industry 3743, Railroad equipment	873.0	653.3	1 539.2
Industry 3751, Motorcycles, bicycles, and parts	303.6	262.1	409.2
Industry 3792, Travel trailers and campers	128.2	130.8	442.6
Industry 3795, Tanks and tank components	603.3	915.8	1 153.0
Industry 3799, Transportation equipment, n.e.c.	157.8	153.2	375.3

See Inventories in appendixes for explanation of the difference between end-of-1981 inventory figure shown in table and corresponding figure shown in footnote.

⁵Data in value of shipments column represent value of work done rather than value of shipments. Consequently, formula for computing value added by manufacture was modified to exclude any change between beginning- and end-of-year inventories.

⁶Industry was defined or redefined for 1972 Census of Manufactures, so data are available only for years shown.

⁷Data either have associated standard errors exceeding 15 percent or are not consistent with other census series and related data; thus these estimates may be of limited reliability.

Table 1b. Selected Operating Ratios for the Industry: 1982 and Earlier Years

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
INDUSTRY 3731, SHIP BUILDING AND REPAIRING									
1982 Census	22 413	78	1 985	10.68	42	76	38 260	59	24.60
1981 ASM	21 056	79	2 022	9.77	43	77	35 236	60	21.93
1980 ASM	18 953	80	1 984	8.77	42	79	30 105	63	18.97
1979 ASM	17 120	80	1 961	7.95	41	79	26 824	64	17.11
1978 ASM	15 207	79	1 939	7.21	41	79	23 587	64	15.30
1977 Census	14 138	79	1 981	6.52	41	80	21 684	65	13.80
1976 ASM	13 346	79	1 980	6.19	44	82	19 767	68	12.57
1975 ASM	11 957	80	1 903	5.75	48	83	17 515	68	11.51
1974 ASM	10 909	80	1 934	5.17	47	84	15 705	69	10.21
1973 ASM	10 258	79	1 982	4.75	44	83	14 570	70	9.27
1972 Census	9 836	81	1 983	4.51	43	86	13 010	76	8.06
1971 ASM	9 189	82	1 986	4.23	43	86	12 269	75	7.58
1970 ASM	8 705	81	1 961	4.09	40	83	12 067	72	7.56
1969 ASM	8 484	82	1 999	3.94	43	91	10 156	84	6.17
1968 ASM	7 980	83	1 980	3.73	46	91	9 478	84	5.79
1967 Census	7 752	82	2 023	3.55	43	86	10 305	75	6.19
INDUSTRY 3732, BOAT BUILDING AND REPAIRING									
1982 Census	15 319	80	1 945	7.04	52	77	29 398	52	18.81
1981 ASM	13 813	81	1 915	6.35	54	79	25 978	53	16.73
1980 ASM	12 518	80	1 879	5.95	55	80	22 528	58	14.96
1979 ASM	11 447	81	1 905	5.35	56	80	21 473	53	13.87
1978 ASM	10 435	82	1 883	4.95	54	78	20 357	51	13.12
1977 Census	10 178	81	1 921	4.75	54	78	19 550	52	12.52
1976 ASM	9 488	82	1 868	4.77	54	78	18 352	52	11.98
1975 ASM	8 743	81	1 846	4.45	51	74	17 768	49	11.91
1974 ASM	7 175	81	1 858	3.60	51	76	13 455	53	8.92
1973 ASM	7 032	83	1 847	3.41	53	80	12 722	55	8.31
1972 Census	6 929	83	1 905	3.32	53	79	12 729	54	8.07
1971 ASM	6 545	81	1 930	3.15	51	78	11 680	56	7.51
1970 ASM	6 120	82	1 952	2.87	52	81	10 680	57	6.71
1969 ASM	6 052	85	1 985	2.83	53	83	10 078	60	5.96
1968 ASM	5 746	86	2 040	2.60	51	80	9 944	58	5.68
1967 Census	5 344	86	1 977	2.47	52	81	9 010	59	5.31
INDUSTRY 3743, RAILROAD EQUIPMENT									
1982 Census	22 910	66	1 706	12.31	51	74	43 241	53	38.35
1981 ASM	22 512	70	1 821	11.72	54	75	47 358	48	37.06
1980 ASM	20 940	75	1 845	10.90	56	74	49 340	42	35.59
1979 ASM	19 081	78	1 922	9.38	57	75	48 086	40	31.94
1978 ASM	17 306	77	1 910	8.41	57	77	39 948	43	27.17
1977 Census	15 783	76	1 864	7.81	56	77	33 442	47	23.71
1976 ASM	14 657	74	1 846	7.35	57	78	28 808	51	20.96
1975 ASM	13 388	78	1 879	6.65	62	81	26 282	51	18.00
1974 ASM	12 236	79	1 943	5.95	61	82	26 666	46	17.33
1973 ASM	11 288	77	1 929	5.42	56	78	23 589	48	15.91
1972 Census	10 415	76	1 893	5.12	46	68	21 915	48	15.31
1971 ASM	9 624	77	1 921	4.65	58	80	19 141	50	13.02
1970 ASM	8 922	77	1 918	4.31	61	83	16 358	55	11.04
1969 ASM	8 651	79	1 998	4.05	60	81	16 836	51	10.69
1968 ASM	7 992	76	1 976	3.76	59	82	15 017	53	9.95
1967 Census	7 539	78	1 944	3.64	62	82	13 920	54	9.13
INDUSTRY 3751, MOTORCYCLES, BICYCLES, AND PARTS									
1982 Census	17 300	80	1 827	8.88	66	83	30 962	56	21.18
1981 ASM	16 007	81	1 920	7.82	67	84	30 698	52	19.85
1980 ASM	14 289	84	1 890	6.89	65	81	31 257	46	19.80
1979 ASM	13 349	85	1 958	6.34	68	84	26 882	50	16.11
1978 ASM	11 616	85	1 323	5.71	67	84	24 890	47	15.97
1977 Census	10 827	85	1 850	5.28	66	82	23 705	46	15.03
1976 ASM	11 036	83	1 798	5.43	65	84	20 730	53	13.85
1975 ASM	10 543	79	1 865	5.16	64	83	18 171	58	12.29
1974 ASM	8 995	85	1 889	4.27	62	80	21 513	42	13.43
1973 ASM	8 331	86	1 927	3.88	58	79	17 674	47	10.63
1972 Census	7 932	85	1 940	3.65	57	78	17 909	44	10.83
1971 ASM	7 723	83	1 947	3.56	55	77	15 847	49	9.78
1970 ASM	6 689	81	1 850	3.29	58	81	12 581	53	8.39
1969 ASM	6 583	82	1 923	3.06	58	82	11 528	57	7.32
1968 ASM	6 286	84	1 972	2.83	55	78	13 159	48	7.93
1967 Census	5 858	84	1 891	2.80	57	80	11 350	52	7.13
INDUSTRY 3792, TRAVEL TRAILERS AND CAMPERS									
1982 Census	16 058	81	1 821	7.34	65	83	32 014	50	21.66
1981 ASM	13 779	81	1 800	6.20	66	85	24 981	55	17.10
1980 ASM	12 320	77	1 819	5.67	65	85	20 520	60	14.59
1979 ASM	11 578	78	1 807	5.42	65	84	19 641	59	13.92
1978 ASM	11 359	83	1 839	5.25	68	85	21 359	53	14.00
1977 Census	10 483	83	1 867	4.84	68	85	19 403	54	12.54
1976 ASM	9 613	82	1 995	4.19	69	85	19 774	49	12.11
1975 ASM	9 150	83	1 893	4.19	68	85	16 930	54	10.75
1974 ASM	8 297	81	1 976	3.62	63	84	14 211	58	8.84
1973 ASM	7 068	85	1 783	3.41	64	84	12 450	57	8.25
1972 Census	7 178	84	1 859	3.39	66	86	12 935	55	8.30

See footnotes at end of table.

Table 1b. Selected Operating Ratios for the Industry: 1982 and Earlier Years—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Year	Payroll per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
INDUSTRY 3795, TANKS AND TANK COMPONENTS									
1982 Census	26 182	69	1 848	12.54	64	84	63 735	41	49.94
1981 ASM	23 099	74	1 800	11.72	50	70	73 458	31	55.19
1980 ASM	21 353	76	1 911	10.33	61	81	48 692	44	33.55
1979 ASM	17 440	81	1 771	8.88	58	81	39 634	44	27.52
1978 ASM	16 791	80	1 944	8.02	58	78	28 351	59	18.26
1977 Census	16 815	81	1 980	7.89	63	85	35 290	48	22.10
1978 ASM	14 898	79	2 013	7.15	65	85	31 194	48	19.72
1975 ASM	13 417	81	1 985	6.37	55	78	30 762	44	19.14
1974 ASM	13 455	77	2 068	6.20	54	82	26 675	50	16.84
1973 ASM	11 968	79	2 020	5.49	58	82	21 556	56	13.45
1972 Census	11 017	78	1 957	5.21	55	79	18 932	58	12.41
1971 ASM	9 918	70	1 980	4.45	56	77	24 808	40	17.93
1970 ASM	9 383	65	2 019	4.34	58	79	17 222	54	13.04
1969 ASM	9 344	67	2 109	4.25	57	78	14 802	83	10.53
1968 ASM	8 635	73	2 033	3.83	66	87	14 333	60	9.66
1967 Census	7 682	76	2 070	3.29	67	93	10 962	70	6.99
INDUSTRY 3799, TRANSPORTATION EQUIPMENT, N.E.C.									
1982 Census	16 692	69	1 919	7.18	58	78	34 804	48	26.23
1981 ASM	14 419	69	2 000	6.14	65	85	26 151	55	19.06
1980 ASM	13 344	71	1 970	5.72	65	86	22 366	60	16.00
1979 ASM	12 056	75	1 938	5.37	69	88	19 794	61	13.66
1978 ASM	10 763	74	1 798	5.25	64	82	21 825	49	16.48
1977 Census	10 350	72	1 797	4.71	62	79	22 592	46	17.50
1978 ASM	10 138	78	1 724	4.79	60	77	24 987	41	18.99
1975 ASM	9 298	74	1 867	4.27	60	76	22 177	42	15.95
1974 ASM	7 886	77	1 680	3.99	60	76	20 310	39	15.65
1973 ASM	7 533	77	2 007	3.26	62	81	16 300	46	10.59
1972 Census	7 280	83	1 881	3.25	66	84	14 416	50	9.21

Note: For qualifications of data, see footnotes on table 1a.

Table 2. Industry Statistics for Selected States: 1982 and 1977

[Excludes data for auxiliaries. Includes data for States with 150 employees or more. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1982											1977		
	E¹	All establishments²		All employees		Production workers			Value added by manufacture⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employ-ees³ (1,000)	Value added by manufac-ture (million dollars)
		Total (no.)	With 20 employ-ees or more (no.)	Number³ (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 3731, SHIP BUILDING AND REPAIRING														
United States -----	-	890	379	166.9	3 740.7	130.8	259.6	2 773.7	56 385.6	4 593.6	510 979.2	438.6	176.4	3 825.0
Alabama -----	-	28	21	5.1	89.7	4.5	8.6	74.2	160.8	132.6	293.4	4.6	2.9	54.3
Arkansas -----	-	4	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
California -----	-	75	39	17.3	489.4	15.1	28.9	379.4	805.2	472.0	1 277.2	(D)	15.8	390.9
Connecticut -----	-	5	2	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Florida -----	-	78	33	7.0	126.8	6.0	11.6	101.6	236.8	180.6	417.5	23.3	6.6	134.6
Georgia -----	E3	4	4	.4	8.7	.3	.5	7.0	17.8	7.3	25.1	2.0	BB	(D)
Hawaii -----	-	3	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Indiana -----	-	4	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Kentucky -----	-	6	3	.3	5.5	.2	.4	4.4	7.8	5.0	12.9	1.1	BB	(D)
Louisiana -----	-	112	84	18.8	392.4	15.4	33.4	325.0	647.9	614.2	1 262.0	74.7	17.1	425.6
Maine -----	-	13	4	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Maryland -----	-	14	6	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Massachusetts -----	-	13	6	3.5	80.1	2.6	4.8	47.5	101.0	58.2	159.2	.9	FF	(D)
Michigan -----	-	4	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Mississippi -----	-	24	18	16.2	356.0	11.2	22.0	221.3	613.8	651.4	1 265.2	23.6	FF	(D)
Missouri -----	-	6	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
New Jersey -----	E2	27	14	1.8	40.8	1.5	2.8	29.7	72.6	45.5	118.1	2.7	EE	(D)
New York -----	E2	48	20	2.3	51.3	1.9	3.9	38.9	118.0	69.4	187.4	5.9	4.8	112.0
Ohio -----	-	15	4	.7	14.9	.5	1.1	12.0	24.3	18.8	43.1	1.1	EE	(D)
Oregon -----	E3	16	7	2.2	76.7	1.8	3.9	63.6	126.7	70.3	197.0	2.4	EE	(D)
Pennsylvania -----	-	12	5	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Rhode Island -----	E5	8	6	.6	13.4	.5	1.1	9.7	21.6	16.0	37.6	.9	.3	7.2
South Carolina -----	E5	7	5	1.5	25.8	1.1	2.3	18.6	47.8	33.1	80.9	(D)	EE	(D)
Tennessee -----	-	4	4	.7	13.7	.5	.8	8.2	19.7	19.1	38.9	(D)	EE	(D)
Texas -----	E1	66	36	10.0	221.0	7.9	16.0	171.5	370.3	355.3	725.6	50.8	7.9	155.9
Virginia -----	-	27	17	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Washington -----	-	43	21	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	7.1	242.2
Wisconsin -----	E1	7	5	2.3	53.5	1.9	4.0	41.4	100.1	88.0	188.1	6.9	EE	(D)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1982 and 1977—Con.

[Excludes data for auxiliaries. Includes data for States with 150 employees or more. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area	1982											1977		
	E¹	All establishments²		All employees		Production workers			Value added by manufacture⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees³ (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number³ (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
INDUSTRY 3732, BOAT BUILDING AND REPAIRING														
United States	E1	1 878	384	38.2	585.2	30.7	59.7	420.3	1 123.0	1 229.1	2 347.2	57.5	43.8	856.3
Alabama	E2	30	2	.2	2.2	.2	.3	1.8	3.7	4.0	7.3	.1	1.0	16.3
Arizona	-	12	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Arkansas	-	20	9	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
California	-	259	46	4.2	64.9	3.4	6.4	46.6	141.2	125.2	265.3	5.0	5.9	124.7
Connecticut	-	30	5	.4	5.4	.3	.5	3.9	8.4	6.7	15.5	.2	.5	10.1
Florida	E1	337	72	7.9	124.1	6.1	12.5	85.8	228.9	268.4	488.3	11.0	8.4	135.8
Georgia	-	17	5	.6	7.7	.5	.9	5.9	16.8	21.2	37.8	.4	BB	(D)
Illinois	E1	19	6	.7	14.5	.6	1.1	10.7	25.1	31.0	55.5	(D)	CC	(D)
Indiana	-	23	11	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Kansas	-	6	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Kentucky	-	15	4	.4	5.2	.4	.7	4.2	11.8	7.8	19.8	.5	BB	(D)
Louisiana	E2	84	23	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	1.9	37.9
Maine	E1	78	10	.7	7.8	.5	1.0	5.6	13.9	14.5	28.3	1.0	.4	7.0
Maryland	-	42	7	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.3	4.7
Massachusetts	-	65	12	1.4	19.7	1.0	2.0	12.4	37.0	34.7	73.3	1.4	EE	(D)
Michigan	E1	45	10	1.6	28.9	1.4	2.7	20.6	45.3	72.6	119.4	(D)	EE	(D)
Minnesota	E4	27	10	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Mississippi	-	15	4	.2	3.5	.2	.3	2.6	6.8	4.1	11.1	.1	.3	5.4
Missouri	E2	16	7	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
New Hampshire	E7	11	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
New Jersey	E1	50	14	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
New York	E2	77	8	.8	11.7	.6	1.2	8.6	17.1	22.4	39.3	(D)	1.1	21.1
North Carolina	E1	53	14	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Ohio	-	27	4	.3	3.6	.2	.4	2.9	7.0	8.9	16.0	.3	.3	5.2
Oklahoma	E6	14	4	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.2	3.3
Oregon	E2	46	5	.6	10.2	.5	1.2	7.8	16.9	20.6	37.3	.5	BB	(D)
Pennsylvania	-	12	3	.3	6.8	.3	.6	4.5	10.1	11.3	20.2	.5	.3	5.2
Rhode Island	-	23	6	.9	13.9	.7	1.6	9.8	28.0	34.3	62.6	1.0	.7	12.7
South Carolina	-	27	9	.6	9.0	.5	.9	6.6	24.9	30.8	55.6	(D)	CC	(D)
Tennessee	-	40	15	1.1	13.4	.9	1.7	10.1	29.4	51.4	81.0	(D)	EE	(D)
Texas	E1	100	15	1.2	15.9	1.0	1.7	11.7	31.0	35.9	67.9	1.6	3.1	56.4
Virginia	E1	39	6	.7	12.2	.5	1.1	9.4	17.4	11.4	28.2	2.4	.9	14.5
Washington	E1	132	23	2.6	45.8	2.1	3.9	32.3	82.7	74.8	161.9	5.8	FF	(D)
Wisconsin	E4	30	6	.8	11.5	.6	1.2	8.5	23.4	28.0	51.5	.6	EE	(D)
INDUSTRY 3743, RAILROAD EQUIPMENT														
United States	-	200	107	34.5	790.4	22.8	38.9	478.7	1 491.8	1 770.5	3 456.6	142.3	56.3	1 882.8
Delaware	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Georgia	-	10	6	.6	8.9	.4	.6	4.9	14.7	44.4	61.1	.8	CC	(D)
Idaho	-	1	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Illinois	-	45	26	10.1	264.6	6.7	12.4	165.8	587.2	564.3	1 203.4	24.9	14.2	671.6
Indiana	-	8	5	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Kansas	E1	7	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.2	6.5
Michigan	-	4	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Minnesota	E2	7	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Missouri	-	2	1	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
New Jersey	-	3	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
New York	-	6	3	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Ohio	-	13	7	1.7	41.8	1.0	1.8	25.9	37.7	66.6	128.7	(D)	3.8	92.0
Pennsylvania	-	32	19	13.3	289.8	8.8	14.0	166.1	538.2	563.0	1 188.8	(D)	18.7	616.2
Tennessee	-	8	3	.3	5.6	.3	.4	4.3	11.1	20.7	31.6	(D)	BB	(D)
Texas	-	10	5	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Vermont	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Virginia	-	3	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
West Virginia	-	3	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Wisconsin	E1	5	3	.2	3.6	.2	.2	2.2	6.5	8.4	15.3	.7	.3	10.6
INDUSTRY 3751, MOTORCYCLES, BICYCLES, AND PARTS														
United States	-	273	67	13.0	224.9	10.4	19.0	168.8	402.5	888.9	1 341.1	23.1	15.8	369.8
California	E2	126	28	1.7	22.1	1.4	2.6	14.8	43.0	52.3	94.4	(D)	2.2	41.5
Connecticut	-	3	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.2	5.1
Illinois	-	14	5	1.3	22.8	.9	1.4	14.6	50.3	62.0	131.1	1.8	2.1	54.3
Indiana	-	3	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.2	3.9
Kentucky	-	2	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Massachusetts	-	5	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Minnesota	-	3	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Nebraska	-	3	3	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Ohio	-	9	4	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Oklahoma	-	2	1	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Pennsylvania	-	5	2	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Tennessee	-	9	3	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Wisconsin	-	5	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)

See footnotes at end of table.

Table 2. Industry Statistics for Selected States: 1982 and 1977—Con.

[Excludes data for auxiliaries. Includes data for States with 150 employees or more. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and geographic area		1982											1977	
		All establishments ²		All employees		Production workers			Value added by manufacture ⁴ (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	All employees ³ (1,000)	Value added by manufacture (million dollars)
		Total (no.)	With 20 employees or more (no.)	Number ³ (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)						
E'														
INDUSTRY 3792, TRAVEL TRAILERS AND CAMPERS														
United States	-	492	142	13.8	221.6	11.2	20.4	149.8	441.8	837.5	1 280.8	16.9	26.3	510.3
Arizona	E4	17	2	.2	3.0	.2	.4	2.1	6.3	9.9	16.1	.1	AA	(D)
California	E1	95	27	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	5.5	100.4
Georgia	-	11	4	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Idaho	E1	7	3	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Illinois	-	8	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.7	15.6
Indiana	-	75	42	4.7	86.3	3.8	7.1	58.4	169.3	364.9	536.8	8.8	6.5	141.5
Kansas	E2	12	6	.6	7.0	.5	.8	4.5	11.0	28.8	39.4	.6	CC	(D)
Maryland	-	2	2	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Michigan	-	24	8	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Minnesota	-	11	2	.2	2.8	.2	.3	2.4	5.3	5.5	10.6	(D)	(NA)	(NA)
Missouri	-	11	3	.2	2.0	.2	.3	1.3	4.6	7.0	11.6	.3	.4	5.1
Ohio	-	8	3	.5	8.5	.4	.8	4.9	20.1	31.8	51.1	.2	1.3	17.9
Oregon	E1	19	6	.6	10.0	.4	.8	6.1	20.2	32.1	52.3	.4	EE	(D)
Pennsylvania	-	25	10	1.0	13.2	.8	1.5	10.1	29.2	53.8	85.3	(D)	1.4	30.7
Tennessee	E5	7	2	.2	1.4	.1	.2	1.0	1.2	4.4	5.6	(D)	(NA)	(NA)
Texas	-	37	9	.7	11.0	.6	1.1	7.4	23.9	45.4	69.3	1.0	1.3	28.8
INDUSTRY 3795, TANKS AND TANK COMPONENTS														
United States	E1	43	36	18.1	473.9	12.5	23.1	289.6	1 153.6	1 503.3	2 343.7	114.5	12.4	437.6
California	-	7	5	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
Indiana	-	2	2	EE	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Massachusetts	-	3	3	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Michigan	-	13	10	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	FF	(D)
New York	-	3	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Ohio	-	6	6	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Pennsylvania	-	3	3	FF	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	2.4	93.8
INDUSTRY 3799, TRANSPORTATION EQUIPMENT, N.E.C.														
United States	E1	424	119	10.7	178.6	7.4	14.2	101.9	372.4	510.9	886.2	14.8	10.3	232.7
Alabama	-	9	5	.3	4.0	.2	.3	2.4	7.5	14.3	21.6	(D)	(NA)	(NA)
California	E1	46	9	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	EE	(D)
Colorado	E9	4	1	AA	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Florida	E1	28	9	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.4	7.2
Georgia	-	11	4	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
Indiana	-	24	9	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Iowa	-	9	4	.2	4.2	.2	.4	2.7	8.4	12.3	20.5	(D)	AA	(D)
Kentucky	-	6	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(NA)	(NA)
Massachusetts	-	10	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Michigan	E1	19	6	.5	7.9	.4	.7	5.8	17.4	11.7	28.9	(D)	(NA)	(NA)
Minnesota	-	13	3	.5	9.3	.3	.5	4.2	17.6	40.4	58.6	(D)	1.5	51.0
Nebraska	-	3	2	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	CC	(D)
North Carolina	E1	13	5	.3	3.7	.2	.5	2.5	6.9	9.7	16.1	.1	.4	5.2
Ohio	E1	17	5	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Oklahoma	-	13	7	.4	6.8	.3	.6	4.5	10.0	26.2	36.1	(D)	.5	9.4
Pennsylvania	E2	17	6	CC	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	BB	(D)
Texas	E1	46	18	1.3	18.0	1.0	1.8	11.4	34.3	55.8	92.7	1.2	EE	(D)
Washington	-	9	2	BB	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	AA	(D)
Wisconsin	-	12	6	.3	5.9	.2	.4	3.2	12.5	18.8	31.7	1.6	.3	9.2

Note: For qualifications of data, see footnotes on table 1a.

¹Payroll and sales data for some small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown for those States where estimated data based on administrative records data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Includes establishments with payroll at any time during year.

³Statistics for some producing States have been withheld to avoid disclosing data for individual companies. However, for States with 150 employees or more, number of establishments is shown and employment size range is indicated by one of the following symbols: AA—150 to 249 employees; BB—250 to 499 employees; CC—500 to 999 employees; EE—1,000 to 2,499 employees; FF—2,500 employees or more.

⁴Beginning in 1982, all respondents were requested to report their inventories at cost or market prior to adjustment to LIFO cost. This is a change from prior years in which respondents were permitted to value their inventories using any generally accepted accounting method. Consequently, data for inventories and value added by manufacture are not comparable to prior-year data.

⁵Data in value of shipments column represent value of work done rather than value of shipments. Consequently, formula for computing value added by manufacture was modified to exclude any change between beginning- and end-of-year inventories.

Table 3a. Summary Statistics for the Industry: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Ship building and repairing (SIC 3731)	Boat building and repairing (SIC 3732)	Railroad equipment (SIC 3743)	Motorcycles, bicycles, and parts (SIC 3751)	Travel trailers and campers (SIC 3792)	Tanks and tank components (SIC 3795)	Transportation equipment, n.e.c. (SIC 3799)
Companies ¹ number ..	616	1 833	158	269	446	37	407
All establishments ² do ..	690	1 876	200	273	492	43	424
With 1 to 19 employees do ..	311	1 492	93	206	350	7	305
With 20 to 99 employees do ..	186	301	60	49	111	20	96
With 100 employees or more do ..	193	83	47	18	31	18	23
All employees:							
Average for year 1,000 ..	166.9	38.2	34.5	13.0	13.8	18.1	10.7
Annual payroll ³ mil. dol. ..	3 740.7	585.2	790.4	224.9	221.6	473.9	178.6
Production workers:							
Average for year 1,000 ..	130.8	30.7	22.8	10.4	11.2	12.5	7.4
March do ..	139.8	31.8	25.9	12.6	11.2	12.0	7.8
May do ..	136.1	31.9	24.9	10.6	11.7	12.3	7.8
August do ..	127.3	29.6	21.4	9.0	11.1	12.8	7.4
November do ..	120.0	29.5	19.1	9.6	11.0	13.1	7.0
Hours millions ..	259.6	59.7	38.9	19.0	20.4	23.1	14.2
January to March do ..	68.2	15.2	11.1	5.7	4.9	6.0	3.6
April to June do ..	67.9	15.8	10.3	4.8	5.4	5.7	3.8
July to September do ..	64.0	14.1	9.1	4.1	5.0	5.5	3.4
October to December do ..	59.5	14.2	8.3	4.3	5.0	5.9	3.3
Wages mil. dol. ..	2 773.7	420.3	478.7	168.8	149.8	289.6	101.9
Value added by manufacture ⁴ do ..	56 385.6	1 123.0	1 491.8	402.5	441.8	1 153.6	372.4
Cost of materials, etc. ⁵ do ..	4 593.6	1 229.1	1 770.5	888.9	837.5	1 503.3	510.9
Materials, parts, containers, etc., consumed do ..	3 958.0	1 163.0	1 646.1	836.0	779.2	1 369.8	469.4
Resales do ..	45.2	26.3	53.9	(D)	47.5	(D)	19.3
Fuels consumed ⁷ do ..	46.7	9.0	28.2	8.3	3.8	8.5	3.3
Purchased electric energy ⁸ do ..	106.2	15.6	30.5	8.8	6.1	10.8	5.7
Contract work do ..	437.5	14.9	11.8	(D)	.8	(D)	13.3
Value of shipments, including resales do ..	10 979.2	2 347.2	3 456.6	1 341.1	1 280.8	2 343.7	886.2
Value of resales do ..	52.5	40.3	77.5	(D)	50.3	(D)	28.8
Manufacturers' inventories (see tables 3b and 3c)							
Capital expenditures for plant and equipment ⁹ do ..	454.3	60.6	146.8	23.7	21.6	116.4	18.7
New capital expenditures do ..	438.6	57.5	142.3	23.1	16.9	114.5	14.8
New buildings and other structures do ..	193.8	11.3	44.6	4.6	6.1	33.5	3.0
New machinery and equipment do ..	244.8	46.3	97.8	18.5	10.8	80.9	11.8
Used capital expenditures do ..	15.8	3.2	4.5	.7	4.7	1.9	2.0
Primary product specialization ratio ¹⁰ percent ..	99	98	85	85	88	(D)	92
Coverage ratio ¹¹ do ..	99	96	96	96	97	79	82

¹For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

²Includes establishments with payroll at any time during year.

³Data on supplemental labor costs are not included in annual payroll, but are shown in table 3d.

⁴Value added by manufacture is computed using inventory data reported on a cost or market basis prior to any adjustment to LIFO cost. See table 3b, footnote 1 for further explanation.

⁵Data in value of shipments column represent value of work done rather than value of shipments. Consequently, formula for computing value added by manufacture was modified to exclude any change between beginning- and end-of-year inventories.

⁶Data on purchased services for the repair of building and machinery and for communication services are not included in cost of materials, etc., but are

⁷Data on purchased fuels by type were not collected for 1982. See MC82-S-4, Fuels and Electric Energy Consumed, for 1981 data on purchased fuels by type.

⁸Data on quantity of electric energy used for heat and power are included in table 3d.

⁹Data on capital expenditures for new machinery and equipment by type, depreciable assets, retirements, rental payments, and depreciation are included in table 3d.

¹⁰Represents ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for establishments classified in industry.

¹¹Represents ratio of primary products shipped by establishments classified in industry to total shipments of such products by all manufacturing establishments, wherever classified.

Table 3b. Value of Inventories for the Industry: End of 1981 and 1982

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Ship building and repairing (SIC 3731)		Boat building and repairing (SIC 3732)		Railroad equipment (SIC 3743)		Motorcycles, bicycles, and parts (SIC 3751)	
	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982
Total Inventories ¹	1 701.3	1 355.1	452.9	482.0	1 045.7	775.7	336.1	285.5
Detail by method of valuation:								
Subject to LIFO costing ²	128.6	128.8	102.9	99.1	354.8	240.6	241.3	207.5
LIFO reserve	16.9	16.5	19.9	20.0	174.5	124.0	38.9	35.7
LIFO value	111.6	112.2	83.0	79.1	180.3	116.6	202.4	171.8
Not subject to LIFO costing	1 406.0	1 053.1	199.5	207.6	662.4	506.1	63.4	47.8
Valuation method not reported ³	160.7	168.8	147.3	151.8	27.7	27.9	30.2	29.5
Amount subject to LIFO reported without associated reserve and value ⁴	6.0	4.5	3.1	3.5	.9	1.1	1.2	1.0
Detail by stage of fabrication:								
Finished goods	70.6	121.3	121.4	134.2	325.9	279.1	50.5	131.9
Work in process	1 245.0	909.1	159.7	151.9	491.5	344.0	180.9	49.7
Materials and supplies	385.7	324.8	171.7	176.0	228.3	152.5	104.8	103.9

See footnotes at end of table.

Table 3b. Value of Inventories for the Industry: End of 1981 and 1982—Con.

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Travel trailers and campers (SIC 3792)		Tanks and tank components (SIC 3795)		Transportation equipment, n.e.c. (SIC 3799)	
	End of 1981	End of 1982	End of 1981	End of 1982	End of 1981	End of 1982
Total inventories¹	135.1	136.5	605.3	918.4	160.0	170.7
Detail by method of valuation:						
Subject to LIFO costing ²	29.5	29.8	12.4	16.4	67.0	59.9
LIFO reserve	9.3	10.4	1.9	2.6	17.8	17.4
LIFO value	20.2	19.4	10.5	13.8	49.2	42.4
Not subject to LIFO costing	65.0	64.5	588.0	894.2	62.7	62.4
Valuation method not reported ³	40.4	42.0	6.9	7.9	49.7	47.9
Amount subject to LIFO reported without associated reserve and value ⁴ .....	.3	.3	-	-	.8	.6
Detail by stage of fabrication:						
Finished goods	51.6	49.7	5.3	6.7	51.2	46.4
Work in process	16.7	16.9	588.8	900.6	57.1	59.0
Materials and supplies	66.8	70.0	11.2	11.2	71.7	65.3

¹Effective with the 1982 Economic Censuses, uniform instructions for reporting inventories were introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (LIFO, FIFO, market, to name a few). In 1982, all respondents were requested to report inventories at cost or market. LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve. For further explanation, see inventories in appendixes.

²Only includes data reported by respondents who (a) indicated amount of inventories subject to LIFO cost, and (b) provided sufficient information to determine associated LIFO reserve and value figures.

³Includes data estimated for nonresponse and nonmail administrative records and data reported by respondents who provided total inventory figures without other information.

⁴Includes data reported by respondents who indicated their inventories were subject to LIFO cost, but did not provide associated LIFO reserve and value figures.

Table 3c. Inventories by Specific Method of Valuation for the Industry: End of 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Ship building and repairing (SIC 3731)		Boat building and repairing (SIC 3732)		Railroad equipment (SIC 3743)		Motorcycles, bicycles, and parts (SIC 3751)	
	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)
Total inventories	100.0	(X)	100.0	(X)	100.0	(X)	100.0	(X)
Last-In, First-Out (LIFO) methods	9.5	(X)	21.4	(X)	31.0	(X)	72.7	(X)
Non-LIFO methods	77.7	(X)	44.9	(X)	65.2	(X)	16.7	(X)
Cost basis:								
First-In, First-Out (FIFO)	19.3	1.0	19.1	1.9	14.1	.3	8.1	.8
Average cost	19.8	.7	3.2	(S)	33.5	.6	1.5	.2
Specific or actual cost	35.9	1.0	11.7	2.1	5.6	.1	.2	.1
Standard cost	1.8	(Z)	7.9	1.8	9.7	.4	3.3	.4
Other .....	.6	.3	.5	.1	2.2	.9	.7	(D)
Market basis:								
Market lower than cost .....	.2	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)	(Z)
Market always used .....	.2	.1	2.6	(S)	.1	(S)	2.8	.3
Valuation method not reported	12.5	(X)	32.9	(X)	3.6	(X)	10.3	(X)
Amount subject to LIFO reported without associated reserve and value .....	.3	(X)	.8	(X)	.1	(X)	.4	(X)

Item	Travel trailers and campers (SIC 3792)		Tanks and tank components (SIC 3795)		Transportation equipment, n.e.c. (SIC 3799)	
	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)	Percent of total	Absolute standard error (percent)
Total inventories	100.0	(X)	100.0	(X)	100.0	(X)
Last-In, First-Out (LIFO) methods	21.8	(X)	1.8	(X)	35.1	(X)
Non-LIFO methods	47.2	(X)	97.4	(X)	36.6	(X)
Cost basis:						
First-In, First-Out (FIFO)	30.1	1.3	47.2	.3	15.1	2.5
Average cost .....	.7	(S)	.1	(Z)	1.9	(S)
Specific or actual cost	6.7	1.6	47.0	.3	8.9	3.1
Standard cost	8.2	.4	2.6	.2	8.1	2.3
Other .....	.7	.1	(Z)	(Z)	(Z)	(Z)
Market basis:						
Market lower than cost	(Z)	(Z)	.5	(S)	(Z)	(Z)
Market always used .....	.9	(Z)	(Z)	(Z)	2.5	1.2
Valuation method not reported	30.8	(X)	.9	(X)	28.0	(X)
Amount subject to LIFO reported without associated reserve and value .....	.2	(X)	(Z)	(X)	.3	(X)

Note: The percentages shown for the LIFO and non-LIFO totals and the categories "valuation method not reported" and "amount subject to LIFO reported..." are based on the census universe estimates included in table 3b. The percentages shown for the specific non-LIFO methods of valuation (e.g., FIFO, etc.) are based on a representative sample of establishments included in the annual survey of manufactures (ASM) panel for 1982 (see appendixes for description of ASM). The absolute standard error of each of the ASM estimates is shown above.

Table 3d. Supplemental Industry Statistics Based on Sample Estimates: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Ship building and repairing (SIC 3731)		Boat building and repairing (SIC 3732)		Railroad equipment (SIC 3743)		Motorcycles, bicycles, and parts (SIC 3751)	
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Supplemental labor costs:								
Total	945.3	1	101.0	3	313.7	1	46.1	2
Legal costs	475.1	2	62.8	3	86.7	2	19.7	4
Voluntary costs	470.2	1	38.2	4	227.0	1	26.4	6
Purchased services:								
Cost of purchased services for the repair of—								
Buildings and other structures	30.4	6	1.3	12	6.9	3	.6	3
Response coverage ratio (percent) ²	84.3	(X)	42.7	(X)	83.6	(X)	68.9	(X)
Machinery	74.6	4	4.0	12	19.2	2	2.4	7
Response coverage ratio (percent) ²	86.1	(X)	46.7	(X)	85.2	(X)	68.4	(X)
Cost of purchased communication services	19.6	2	4.1	9	8.3	3	2.0	9
Response coverage ratio (percent) ²	89.0	(X)	46.4	(X)	85.0	(X)	72.4	(X)
Electric energy used for heat and power:								
Purchased:								
Quantity (million kWh)	1 974.2	2	294.6	2	483.3	1	167.0	1
Cost	106.2	(X)	15.6	(X)	30.5	(X)	8.8	(X)
Generated less sold (million kWh)	(S)	(S)	(S)	(S)	146.7	1	-	-
Gross book value of depreciable assets:								
Total:								
Beginning of year	3 084.9	2	490.6	7	1 320.0	4	295.3	3
New capital expenditures	416.4	3	60.4	16	152.8	7	19.2	4
Used capital expenditures	11.3	13	1.0	14	4.2	1	.5	31
Retirements	186.1	2	23.6	12	42.3	3	17.7	6
End of year	3 326.5	2	528.5	7	1 434.7	3	297.3	3
Buildings and other structures:								
Beginning of year	1 405.3	2	190.7	6	433.7	6	94.9	3
New capital expenditures	189.2	4	12.1	19	46.6	6	3.8	6
Used capital expenditures	1.4	1	.3	1	1.5	1	-	1
Retirements	31.5	4	6.1	13	9.2	4	4.2	6
End of year	1 564.5	2	196.9	7	472.6	6	94.5	3
Machinery and equipment:								
Beginning of year	1 679.5	2	299.9	8	886.4	3	200.4	4
New capital expenditures	227.2	2	48.3	17	106.3	9	15.4	5
Automobiles, trucks, etc., for highway use	14.3	4	2.4	12	1.4	24	.8	45
Computers and peripheral data processing equipment	9.8	2	1.8	15	3.6	1	.4	19
All other	197.2	3	43.7	18	101.1	9	14.1	5
New machinery and equipment, n.s.k. ³	6.0	(S)	.4	(S)	.1	(S)	.3	(S)
Used capital expenditures	9.9	14	.8	19	2.6	1	.5	31
Retirements	154.6	2	17.5	13	33.1	3	13.5	7
End of year	1 761.9	2	331.6	9	962.1	3	202.8	4
Rental payments:								
Total	87.4	2	22.8	6	16.9	5	6.1	13
Buildings and other structures	24.4	3	16.0	8	5.2	15	3.3	26
Machinery and equipment	63.0	2	6.8	11	11.7	2	2.6	8
Depreciation charges during 1982:								
Total	191.4	3	40.9	7	84.0	4	23.6	4
Buildings and other structures	69.7	4	9.2	7	17.1	7	4.3	3
Machinery and equipment	121.8	3	31.7	8	66.9	3	19.2	4
Item	Travel trailers and campers (SIC 3792)		Tanks and tank components (SIC 3795)		Transportation equipment, n.e.c. (SIC 3799)			
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)		
Supplemental labor costs:								
Total	34.6	2	104.5	1	27.6			3
Legal costs	24.0	2	40.2	1	14.9			3
Voluntary costs	10.6	2	64.3	1	12.8			4
Purchased services:								
Cost of purchased services for the repair of—								
Buildings and other structures .....	.9	7	2.8	1	.7			23
Response coverage ratio (percent) ²	71.1	(X)	64.2	(X)	65.4			(X)
Machinery	1.5	5	5.4	3	2.0			25
Response coverage ratio (percent) ²	72.6	(X)	66.6	(X)	68.6			(X)
Cost of purchased communication services	3.9	5	2.0	6	2.0			15
Response coverage ratio (percent) ²	75.2	(X)	66.6	(X)	54.2			(X)
Electric energy used for heat and power:								
Purchased:								
Quantity (million kWh)	101.0	1	207.0	2	111.5			5
Cost	6.1	(X)	10.6	(X)	5.7			(X)
Generated less sold (million kWh)	-	-	-	-	(S)			(D)
Gross book value of depreciable assets:								
Total:								
Beginning of year	162.1	3	208.5	2	162.5			6
New capital expenditures	16.3	8	109.9	1	11.3			15
Used capital expenditures	2.4	2	1.3	5	2.4			42
Retirements	9.6	7	3.9	2	4.1			19
End of year	171.2	3	315.8	1	172.1			6
Buildings and other structures:								
Beginning of year	82.8	3	57.1	3	55.4			10
New capital expenditures	5.9	6	33.4	1	2.2			23
Used capital expenditures	1.5	1	1.2	1	1.2			77
Retirements	3.6	12	.2	1	.3			21
End of year	86.6	3	91.5	2	58.5			9

See footnotes at end of table.

Table 3d. Supplemental Industry Statistics Based on Sample Estimates: 1982—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Item	Travel trailers and campers (SIC 3792)		Tanks and tank components (SIC 3795)		Transportation equipment, n.e.c. (SIC 3799)	
	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)	Amount (million dollars)	Relative standard error of estimate ¹ (percent)
Gross book value of depreciable assets—Con.						
Machinery and equipment:						
Beginning of year	79.3	3	151.3	2	107.1	7
New capital expenditures	10.3	11	76.6	1	9.2	15
Automobiles, trucks, etc., for highway use	2.8	33	.7	20	.8	31
Computers and peripheral data processing equipment .....	.4	27	5.1	3	.6	19
All other	7.2	7	70.2	1	7.7	13
New machinery and equipment, n.s.k. ³	(Z)	(S)	.8	(S)	.2	(S)
Used capital expenditures	1.0	5	.1	44	1.1	24
Retirements	6.0	7	3.8	2	3.8	19
End of year	84.6	3	224.3	1	113.6	7
Rental payments:						
Total	6.5	6	7.6	11	8.0	20
Buildings and other structures	4.5	8	3.8	2	4.9	23
Machinery and equipment	2.0	10	3.8	22	3.1	17
Depreciation charges during 1982:						
Total	11.7	4	18.1	2	15.8	10
Buildings and other structures	4.1	3	2.6	3	3.0	18
Machinery and equipment	7.6	5	15.4	3	12.8	10

Note: Data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used expenditures are also shown in table 3a. Data in table 3a are census universe totals and may differ from annual survey of manufactures (ASM) sample estimates shown in this table. Data in this table represent best estimates of year-to-year change as measured by the continuing ASM sample. However, they are subject to sampling error and, hence, as estimates of level, are not as reliable as universe figures shown in table 3a.

¹For description of relative standard error of estimate, see Qualifications of the Data in appendixes.

²Measure of extent to which respondents reported each item. Derived for each item by calculating the ratio of weighted employment for those sample establishments that reported the specific inquiry to weighted total employment for all sample establishments classified in industry. (See appendixes for explanation of sample weight.)

³Represents total machinery and equipment expenditures for establishments that did not break down their expenditures by specific type.

Table 4. Industry Statistics by Employment Size of Establishment: 1982

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and employment size class	E ¹	All estab- lish- ments (no.)	All employees		Production workers			Value added by manufac- ture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expendi- tures (million dollars)	End-of- year invento- ries (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
INDUSTRY 3731, SHIP BUILDING AND REPAIRING												
Total	-	690	166.9	3 740.7	130.8	259.6	2 773.7	6 385.6	4 593.6	10 979.2	438.6	1 355.1
Establishments with an average of—												
1 to 4 employees	E9	145	.3	4.7	.2	.5	4.2	9.7	7.2	16.9	.4	2.8
5 to 9 employees	E7	74	.5	7.9	.4	.8	6.1	14.4	10.7	25.1	1.5	4.5
10 to 19 employees	E5	92	1.3	25.8	1.1	2.2	19.3	47.1	35.2	82.3	1.9	14.8
20 to 49 employees	E3	112	3.3	67.7	2.7	5.3	49.9	125.6	84.4	210.0	7.3	38.3
50 to 99 employees	E3	74	5.4	116.7	4.5	8.9	87.6	203.3	169.0	372.3	8.7	105.7
100 to 249 employees	E3	96	15.0	313.2	12.4	24.9	234.2	546.7	437.8	984.6	55.2	193.3
250 to 499 employees	E1	45	14.9	365.9	12.2	25.2	277.4	564.0	674.8	1 238.7	31.6	284.3
500 to 999 employees	-	30	19.7	464.2	16.1	31.6	296.5	1 038.0	587.1	1 625.1	53.7	272.0
1,000 to 2,499 employees	-	11	17.9	397.2	13.7	28.0	296.5	757.1	504.0	1 261.1	48.9	162.8
2,500 employees or more	-	11	88.5	1 977.5	67.3	132.3	1 427.9	3 079.6	2 083.4	5 163.0	229.4	276.6
Covered by administrative records ²	E9	194	1.4	21.9	1.2	2.3	16.4	38.3	29.0	67.2	1.8	10.9
INDUSTRY 3732, BOAT BUILDING AND REPAIRING												
Total	E1	1 876	38.2	585.2	30.7	59.7	420.3	1 123.0	1 229.1	2 347.2	57.5	462.0
Establishments with an average of—												
1 to 4 employees	E9	898	1.6	20.2	1.3	2.5	16.8	44.5	46.9	90.8	1.5	17.7
5 to 9 employees	E6	334	2.2	26.8	1.8	3.4	19.7	50.0	51.9	101.7	2.4	17.3
10 to 19 employees	E4	260	3.5	45.9	2.8	5.2	33.1	86.2	90.0	175.2	3.1	32.0
20 to 49 employees	E3	209	6.4	92.8	5.1	9.8	66.6	167.5	183.3	350.1	7.2	60.6
50 to 99 employees	E2	92	6.2	96.7	5.1	9.8	71.0	194.8	226.5	417.0	8.3	81.5
100 to 249 employees	E2	55	8.6	130.1	7.0	13.4	93.1	261.2	310.8	572.7	13.8	112.7
250 to 499 employees	E2	24	7.4	128.1	5.8	11.8	90.5	240.3	254.9	498.2	10.9	87.6
500 to 999 employees	-	4	2.4	44.5	1.8	3.7	29.5	78.6	64.9	141.6	10.3	52.6
Covered by administrative records ²	E9	819	2.2	23.1	1.8	3.5	18.1	49.5	52.8	101.6	1.7	18.9
INDUSTRY 3743, RAILROAD EQUIPMENT												
Total	-	200	34.5	790.4	22.8	38.9	478.7	1 491.8	1 770.5	3 456.6	142.3	775.7
Establishments with an average of—												
1 to 4 employees	E7	38	.1	1.3	.1	.1	.9	2.6	2.8	5.4	.1	1.1
5 to 9 employees	E4	28	.2	3.4	.1	.2	2.2	9.2	7.1	16.0	.2	3.5
10 to 19 employees	E4	27	.4	6.5	.2	.5	3.8	14.4	15.3	29.9	.6	5.1
20 to 49 employees	E2	38	1.3	23.7	.9	1.6	14.1	51.9	59.8	115.9	2.9	32.2
50 to 99 employees	E1	22	1.6	33.1	1.1	2.2	20.2	61.3	74.9	138.9	4.5	39.7
100 to 249 employees	E1	25	3.7	73.6	2.5	4.3	46.7	124.3	208.1	351.2	5.7	61.7
250 to 499 employees	-	7	3.1	58.1	1.9	3.2	32.6	57.2	179.4	275.1	2.8	71.5
500 to 999 employees	-	7	4.8	116.1	3.3	5.5	77.4	271.6	274.4	570.6	15.4	67.8
1,000 to 2,499 employees	-	3	19.3	474.7	12.7	21.2	280.8	899.3	948.7	1 953.5	110.1	493.1
2,500 employees or more	-	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	43	.3	4.1	.2	.4	2.8	8.2	9.7	17.7	.5	3.3

See footnotes at end of table.

Table 4. Industry Statistics by Employment Size of Establishment: 1982—Con.

[For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Industry and employment size class	E ¹	All establishments (no.)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)	End-of-year inventories (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)					
INDUSTRY 3751, MOTORCYCLES, BICYCLES, AND PARTS												
Total.....	-	273	13.0	224.9	10.4	19.0	188.8	402.5	888.9	1 341.1	23.1	285.5
Establishments with an average of—												
1 to 4 employees.....	E9	118	.2	2.9	.2	.3	2.6	6.5	10.1	16.5	.3	3.9
5 to 9 employees.....	E8	40	.3	3.1	.2	.4	2.3	6.6	9.2	15.8	.4	3.4
10 to 19 employees.....	E5	48	.7	9.4	.5	.9	6.2	22.0	19.9	41.2	.8	10.0
20 to 49 employees.....	E3	37	1.2	16.0	.9	1.7	10.2	24.6	34.8	60.4	.9	12.0
50 to 99 employees.....	E3	12	.9	11.5	.7	1.4	7.5	27.8	32.0	60.1	1.7	10.7
100 to 249 employees.....	-	9	2.5	42.8	2.1	4.0	31.1	98.6	254.7	354.8	5.9	50.1
250 to 499 employees.....	-	3	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
500 to 999 employees.....	-	4	7.3	139.2	5.8	10.2	108.8	218.4	528.2	792.4	13.0	195.5
1,000 to 2,499 employees.....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
2,500 employees or more.....	-	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	127	.5	5.8	.5	.9	4.6	12.4	19.6	31.6	.6	7.3
INDUSTRY 3792, TRAVEL TRAILERS AND CAMPERS												
Total.....	-	492	13.8	221.6	11.2	20.4	149.8	441.8	837.5	1 280.8	16.9	136.5
Establishments with an average of—												
1 to 4 employees.....	E8	183	.3	4.1	.3	.4	3.3	8.5	16.2	24.3	.2	4.4
5 to 9 employees.....	E7	87	.6	7.1	.4	.8	4.6	14.5	25.9	40.2	.4	5.5
10 to 19 employees.....	E4	80	1.0	14.3	.8	1.4	9.8	25.5	51.7	77.2	.6	9.4
20 to 49 employees.....	E2	60	1.9	27.0	1.5	2.7	17.9	49.4	93.6	144.0	2.2	15.0
50 to 99 employees.....	E1	51	3.7	57.7	2.9	5.3	36.3	108.4	238.3	346.4	3.3	39.1
100 to 249 employees.....	E1	25	3.5	57.8	2.9	5.2	38.1	112.3	226.3	337.3	3.0	30.9
250 to 499 employees.....	-	3	1.0	16.7	.9	1.6	12.8	39.0	48.4	88.1	1.4	12.5
500 to 999 employees.....	-	3	1.9	37.0	1.6	3.0	27.1	84.4	137.0	223.3	6.0	19.8
Covered by administrative records ²	E9	161	.5	5.5	.4	.7	4.0	12.2	22.8	34.6	.3	5.2
INDUSTRY 3795, TANKS AND TANK COMPONENTS												
Total.....	E1	43	18.1	473.9	12.5	23.1	289.6	1 153.6	1 503.3	2 343.7	114.5	918.4
Establishments with an average of—												
1 to 4 employees.....	E4	4	.1	1.0	(Z)	(Z)	.6	2.2	2.0	4.0	.1	.8
5 to 9 employees.....	E2	1	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
10 to 19 employees.....	-	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
20 to 49 employees.....	E3	13	.4	7.8	.3	.7	5.1	22.1	19.2	38.7	2.1	9.9
50 to 99 employees.....	E1	7	.5	9.7	.4	.7	6.0	14.6	23.8	36.9	1.2	9.3
100 to 249 employees.....	E1	5	.8	14.5	.6	1.0	10.1	26.1	32.7	58.4	60.1	10.2
250 to 499 employees.....	E1	3	2.5	72.2	1.1	2.0	25.4	54.2	227.0	283.6	(D)	45.4
500 to 999 employees.....	-	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
1,000 to 2,499 employees.....	-	4	13.8	368.7	9.9	18.7	242.4	1 034.5	1 198.6	1 922.0	51.0	842.8
2,500 employees or more.....	-	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
INDUSTRY 3799, TRANSPORTATION EQUIPMENT, N.E.C.												
Total.....	E1	424	10.7	178.6	7.4	14.2	101.9	372.4	510.9	886.2	14.8	170.7
Establishments with an average of—												
1 to 4 employees.....	E9	152	.3	3.3	.2	.4	2.2	5.8	12.4	18.1	.3	3.3
5 to 9 employees.....	E5	74	.5	6.6	.4	.7	4.3	12.2	23.6	35.9	.7	5.7
10 to 19 employees.....	E3	79	1.1	15.9	.8	1.4	10.1	28.5	46.6	74.9	1.2	11.9
20 to 49 employees.....	E3	67	2.2	32.2	1.6	3.0	19.0	59.8	88.1	149.1	2.9	28.5
50 to 99 employees.....	E2	29	2.1	31.9	1.5	3.0	19.7	64.5	87.8	152.3	2.6	34.4
100 to 249 employees.....	E2	19	2.9	50.1	2.1	4.0	31.4	108.5	133.8	243.0	4.4	54.7
250 to 499 employees.....	-	2	1.7	38.6	.9	1.6	15.2	93.2	118.7	212.9	2.7	32.3
500 to 999 employees.....	-	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
Covered by administrative records ²	E9	115	.3	3.4	.2	.5	2.2	6.3	13.9	20.0	.3	3.8

Note: For qualifications of data, see footnotes on table 1a. Data shown as a (D) are included in underscored figures above.

¹Payroll and sales data for some small single-unit companies with up to 20 employees (cutoff varied by industry) were obtained from administrative records of other government agencies rather than from census report forms. These data were then used in conjunction with industry averages to estimate the items shown for these small establishments. This technique was also used for a small number of other establishments whose reports were not received at time data were tabulated. The following symbols are shown for those States where estimated data based on administrative records data account for 10 percent or more of figures shown: E1—10 to 19 percent; E2—20 to 29 percent; E3—30 to 39 percent; E4—40 to 49 percent; E5—50 to 59 percent; E6—60 to 69 percent; E7—70 to 79 percent; E8—80 to 89 percent; E9—90 percent or more.

²Report forms were not mailed to small single-unit companies with up to 20 employees (cutoff varied by industry). Payroll and sales data for 1982 were obtained from administrative records supplied by other agencies of the Federal Government. Those data were then used in conjunction with industry averages to estimate the items shown. Data are also included in respective size classes shown.

Table 5a. Industry Statistics by Industry and Primary Product Class Specialization: 1982

[Table presents selected statistics for establishments according to their degree of specialization in products primary to their industry. Measures of plant specialization shown are (1) industry specialization: ratio of primary product shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment; and (2) product class specialization: ratio of largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment. See appendix for method of computing ratios. Statistics for establishments with specialization ratios of less than 75 percent are included in total lines but are not shown as a separate class. In addition, data may not be shown for various reasons; e.g., to avoid disclosing operations of individual companies. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes.]

Industry or product class code	Industry or product class by percent of specialization	All establishments (number)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)				
3731	Ship building and repairing:										
	Entire industry	690	166.9	3 740.7	130.8	259.6	2 773.7	6 385.6	4 593.6	10 979.2	438.6
	Establishments with 75 percent specialization or more ..	665	165.1	3 685.6	129.5	256.7	2 742.3	6 302.8	4 463.7	10 766.5	431.1
37311	Nonpropelled ships, new construction:										
	Establishments with this product class primary	49	15.2	345.3	11.8	23.6	257.1	641.2	630.2	1 271.4	59.3
	Establishments with 75 percent specialization or more in class	37	12.5	292.7	9.8	19.4	213.0	531.5	542.3	1 073.8	35.1
37312	Self-propelled ships, military, new:										
	Establishments with this product class primary	12	84.0	1 896.4	63.4	121.7	1 344.2	3 242.5	2 027.0	5 269.5	213.7
	Establishments with 75 percent specialization or more in class	6	29.4	756.5	19.6	40.1	467.2	1 371.0	513.1	1 884.1	62.7
37313	Self-propelled ships, nonmilitary, new:										
	Establishments with this product class primary	124	28.9	609.3	23.6	49.8	475.0	987.6	978.6	1 966.1	85.5
	Establishments with 75 percent specialization or more in class	97	12.8	248.9	11.0	21.7	199.9	460.1	473.1	933.2	19.5
37314	Ship repair, military:										
	Establishments with this product class primary	51	12.2	312.8	10.1	21.4	241.9	537.6	382.4	920.0	17.5
	Establishments with 75 percent specialization or more in class	37	6.8	174.8	5.6	11.6	136.2	310.3	252.9	563.2	9.2
37316	Ship repair, nonmilitary:										
	Establishments with this product class primary	145	22.4	512.8	18.4	36.2	408.3	870.5	493.0	1 363.5	57.1
	Establishments with 75 percent specialization or more in class	119	15.0	339.3	12.2	24.0	266.0	583.5	353.6	937.1	37.1
3732	Boat building and repairing:										
	Entire industry	1 876	38.2	585.2	30.7	59.7	420.3	1 123.0	1 229.1	2 347.2	57.5
	Establishments with 75 percent specialization or more ..	1 838	37.6	574.7	30.2	58.8	412.5	1 090.6	1 214.5	2 305.7	55.4
37322	Outboard motorboats:										
	Establishments with this product class primary	124	5.4	72.0	4.4	7.9	49.7	153.8	175.4	331.3	5.6
	Establishments with 75 percent specialization or more in class	95	4.2	54.8	3.4	6.1	37.5	119.7	127.3	249.5	4.1
37323	Inboard motorboats:										
	Establishments with this product class primary	91	7.9	134.9	6.4	12.9	100.1	256.1	293.5	544.3	16.4
	Establishments with 75 percent specialization or more in class	73	6.4	111.5	5.2	10.7	82.4	208.0	237.4	436.8	15.0
37324	Inboard-outdrive boats:										
	Establishments with this product class primary	76	6.1	102.8	5.0	9.6	72.0	199.4	282.8	488.8	5.7
	Establishments with 75 percent specialization or more in class	52	4.3	75.5	3.6	6.9	52.8	155.1	223.6	385.1	5.0
37327	Boats, n.e.c.:										
	Establishments with this product class primary	134	6.4	92.4	4.8	9.7	61.9	182.1	190.8	376.7	8.4
	Establishments with 75 percent specialization or more in class	110	5.4	79.1	4.1	8.3	53.5	154.2	169.4	330.7	6.8
37328	Boat repair, military and nonmilitary:										
	Establishments with this product class primary	193	5.2	95.3	4.1	7.8	71.5	164.8	111.8	267.2	15.8
	Establishments with 75 percent specialization or more in class	165	4.5	83.1	3.6	6.9	62.2	132.5	99.1	231.0	14.4
3743	Railroad equipment:										
	Entire industry	200	34.5	790.4	22.8	38.9	478.7	1 491.8	1 770.5	3 456.6	142.3
	Establishments with 75 percent specialization or more ..	168	21.3	443.9	14.6	23.6	279.1	790.4	1 099.6	1 938.4	40.8
37431	Locomotives, both new and rebuilt, and parts:										
	Establishments with this product class primary	25	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
	Establishments with 75 percent specialization or more in class	18	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
37432	Passenger and freight train cars:										
	Establishments with this product class primary	36	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
	Establishments with 75 percent specialization or more in class	32	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
37433	Street, subway, trolley, and rapid transit cars:										
	Establishments with this product class primary	48	7.2	159.7	4.8	8.5	97.9	250.5	323.4	555.5	10.6
	Establishments with 75 percent specialization or more in class	39	6.7	149.0	4.5	7.9	91.8	230.5	310.0	522.6	9.7
3751	Motorcycles, bicycles, and parts:										
	Entire industry	273	13.0	224.9	10.4	19.0	168.8	402.5	888.9	1 341.1	23.1
	Establishments with 75 percent specialization or more ..	256	9.8	164.9	7.6	14.2	120.1	304.7	691.9	1 023.3	17.0
37511	Bicycles and parts:										
	Establishments with this product class primary	36	7.8	134.0	6.4	11.1	100.2	226.5	494.2	759.1	15.4
	Establishments with 75 percent specialization or more in class	31	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
37512	Motorcycles and parts:										
	Establishments with this product class primary	58	4.1	78.5	3.2	6.3	59.2	152.2	357.0	520.9	6.4
	Establishments with 75 percent specialization or more in class	50	3.6	70.2	2.7	5.5	53.9	137.2	334.8	483.7	(D)
3792	Travel trailers and campers:										
	Entire industry	492	13.8	221.6	11.2	20.4	149.8	441.8	837.5	1 280.8	16.9
	Establishments with 75 percent specialization or more ..	455	10.4	162.1	8.4	15.0	107.5	317.0	621.1	938.5	9.2
37921	Travel trailers:										
	Establishments with this product class primary	94	7.7	128.1	6.4	11.6	86.4	262.3	531.1	793.6	9.2
	Establishments with 75 percent specialization or more in class	77	5.0	80.8	4.0	7.1	52.5	163.2	314.2	477.0	2.5
37922	Camping trailers, campers, pickup covers:										
	Establishments with this product class primary	123	4.5	71.7	3.5	6.4	48.5	137.6	228.7	368.0	6.6
	Establishments with 75 percent specialization or more in class	108	3.1	48.5	2.5	4.5	32.8	92.9	176.7	271.4	5.2

See footnotes at end of table.

Table 5a. Industry Statistics by Industry and Primary Product Class Specialization: 1982—
Con.

[Table presents selected statistics for establishments according to their degree of specialization in products primary to their industry. Measures of plant specialization shown are (1) industry specialization: ratio of primary product shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment; and (2) product class specialization: ratio of largest primary product class shipments to total product shipments (primary plus secondary, excluding miscellaneous receipts) for the establishment. See appendix for method of computing ratios. Statistics for establishments with specialization ratios of less than 75 percent are included in total lines but are not shown as a separate class. In addition, data may not be shown for various reasons; e.g., to avoid disclosing operations of individual companies. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes.]

Industry or product class code	Industry or product class by percent of specialization	All establishments (number)	All employees		Production workers			Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	New capital expenditures (million dollars)
			Number (1,000)	Payroll (million dollars)	Number (1,000)	Hours (millions)	Wages (million dollars)				
3795	Tanks and tank components:										
	Entire industry	43	18.1	473.9	12.5	23.1	289.6	1 153.6	1 503.3	2 343.7	114.5
	Establishments with 75 percent specialization or more ..	36	15.9	421.8	10.6	19.6	246.7	1 050.5	1 425.1	2 166.0	110.3
3799	Transportation equipment, n.e.c.:										
	Entire industry	424	10.7	178.6	7.4	14.2	101.9	372.4	510.9	886.2	14.8
	Establishments with 75 percent specialization or more ..	395	8.8	143.0	6.0	11.5	81.4	296.9	439.4	739.9	11.2
37993	Golf carts and industrial personnel carriers:										
	Establishments with this product class primary	9	1.6	33.2	.9	1.8	14.5	72.4	99.0	171.2	3.2
	Establishments with 75 percent specialization or more in class	8	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
37994	Snowmobiles and parts:										
	Establishments with this product class primary	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)
	Establishments with 75 percent specialization or more in class	2	(D)	(D)	(D)	(D)	(D)	(D)	(D)	(D)	.2
37996	Automobile and light truck trailers:										
	Establishments with this product class primary	106	3.8	59.9	2.9	5.6	38.2	121.5	153.3	274.7	3.6
	Establishments with 75 percent specialization or more in class	96	3.2	46.3	2.4	4.6	31.1	93.5	126.7	222.1	3.0
37998	Transportation equipment, n.e.c., including all-terrain vehicles:										
	Establishments with this product class primary	98	3.8	66.5	2.6	4.8	37.7	141.0	175.6	319.0	6.5
	Establishments with 75 percent specialization or more in class	79	2.6	49.8	1.8	3.4	27.9	106.4	139.4	247.4	4.6

Note: For qualifications of data, see footnotes on table 1a.

Table 5b. Industry-Product Analysis—Value of Shipments and Primary Product Shipments, Specialization and Coverage Ratios for the Industry: 1982 and Earlier Census Years

[An establishment is assigned to an industry based on shipment values of products representing largest amount considered primary to an industry. Frequently, establishment shipments comprise mixtures of products assigned to an industry (primary), those considered primary to other industries (secondary), and receipts for activities such as merchandising or contract work. Columns A-D show this product pattern for an industry, and column E shows primary product specialization ratio. The extent to which an industry's primary products are shipped by establishments classified in and out of an industry is shown in columns F-H and coverage ratio is shown in column I. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes.]

Industry and product group code	Industry and census year	Value of shipments					Value of primary product shipments			
		Total (million dollars)	Primary products (million dollars)	Secondary products (million dollars)	Miscellaneous receipts (million dollars)	Primary product specialization ratio Col. B ÷ Col. B + C (percent)	Total made in all industries (million dollars)	Made in this industry (million dollars)	Made in other industries (million dollars)	Coverage ratio Col. B ÷ Col. F (percent)
A	B	C	D	E	F	G	H	I		
3731	Ship building and repairing ¹ ----- 1982..	10 979.2	10 583.3	153.2	242.7	99	10 654.5	10 583.3	71.2	99
	1977..	6 495.1	6 193.7	162.4	138.9	97	6 270.3	6 193.7	76.6	99
	1972..	3 281.0	3 123.9	73.3	83.8	98	3 200.7	3 123.9	76.8	98
3732	Boat building and repairing ----- 1982..	2 347.2	2 225.0	44.4	77.9	98	2 307.4	2 225.0	82.4	96
	1977..	1 822.6	1 747.5	32.5	42.7	98	1 822.1	1 747.5	74.6	96
	1972..	1 048.2	990.1	32.9	25.2	97	1 031.1	990.1	41.0	96
3743	Railroad equipment ----- 1982..	3 456.6	2 749.6	481.4	225.5	85	2 878.9	2 749.6	129.3	96
	1977..	4 278.3	3 751.3	361.3	165.6	91	4 001.9	3 751.3	250.5	94
	1972..	2 446.2	2 151.3	188.5	106.4	92	2 284.2	2 151.3	132.9	94
3751	Motorcycles, bicycles, and parts ----- 1982..	1 341.1	1 095.7	199.7	45.7	85	1 143.1	1 095.7	47.4	96
	1977..	1 007.6	825.9	159.7	22.0	84	847.3	825.9	21.3	97
	1972..	659.5	513.6	117.8	27.8	81	540.6	513.6	27.0	95
3792	Travel trailers and campers ----- 1982..	1 280.8	1 052.4	147.1	81.3	88	1 088.1	1 052.4	35.7	97
	1977..	1 582.4	1 326.9	176.1	79.4	88	1 477.6	1 326.9	150.6	90
	1972..	1 342.2	1 202.8	110.6	28.8	92	1 276.5	1 202.8	73.7	94
3795	Tanks and tank components ----- 1982..	2 343.7	(D)	(D)	(D)	(D)	2 880.5	(D)	(D)	(D)
	1977..	934.2	831.8	76.0	26.6	92	1 015.1	831.6	183.6	82
	1972..	272.2	219.9	10.9	41.4	95	285.1	219.9	65.2	77
3799	Transportation equipment, n.e.c. ----- 1982..	886.2	782.5	65.4	38.3	92	954.3	782.5	171.7	82
	1977..	620.9	556.0	34.7	30.2	94	700.3	556.0	144.4	79
	1972..	654.6	581.2	43.7	29.7	93	753.4	(NA)	(NA)	(NA)

¹Establishments classified in industry 3731 report value of work done on ships rather than value of shipments. This applies only to ships and does not apply to secondary products.

²Minimum percentage; exact percentage withheld to avoid disclosing data for individual companies.

³Relationships are not meaningful because of predominance of miscellaneous receipts, particularly receipts for contract and commission work on materials owned by others.

Table 5c-1. Industry-Product Analysis—Shipments by Product Class and Industry: 1982

(Million dollars. Table shows where products of an industry (referred to as primary and listed in table 6a) are made and what products are made by establishments classified in an industry. Read down an industry column to find what products are produced in an industry. Only those product groups that have at least \$2 million in shipments from establishments classified in one of industries included in this chapter are shown. Read across to determine where products of industries in this chapter are produced. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other industries" column. Specified "Other industries" are listed in table 5c-2 if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see explanatory text. For explanation of terms, see appendixes)

1982 product code	Product group, product class, and miscellaneous receipts	All industries	Ship building and repairing (SIC 3731)	Boat building and repairing (SIC 3732)	Railroad equipment (SIC 3743)	Motorcycles, bicycles, and parts (SIC 3751) *	Travel trailers and campers (SIC 3792)	Tanks and tank components (SIC 3795)	Transportation equipment, n.e.c. (SIC 3799)	Other industries
	Total	(X)	10 979.2	2 347.2	3 456.6	1 341.1	1 280.8	2 347.7	886.2	(X)
	Primary products.....	(X)	10 583.3	2 225.0	2 749.6	1 095.7	1 052.4	(D)	782.5	(X)
	Secondary products.....	(X)	153.2	44.4	481.4	199.7	147.1	(D)	65.4	(X)
	Miscellaneous receipts.....	(X)	242.7	77.9	225.5	45.7	81.3	(D)	38.3	(X)
3731-	Ship building and repairing	10 654.5	10 583.3	18.4	-	-	-	-	-	52.8
37311	Nonpropelled ships, new construction.....	1 336.6	1 330.0	(D)	-	-	-	-	-	(D)
37312	Self-propelled ships, military, new.....	4 094.5	(D)	-	-	-	-	-	-	(D)
37313	Self-propelled ships, nonmilitary, new.....	1 672.0	(D)	(D)	-	-	-	-	-	(D)
37314	Ship repair, military.....	1 571.2	(D)	(D)	-	-	-	-	-	(D)
37316	Ship repair, nonmilitary.....	1 592.2	1 589.4	2.8	-	-	-	-	-	(D)
37310	Ship building and repairing, n.s.k.....	188.0	187.2	(D)	-	-	-	-	-	(D)
3732-	Boat building and repairing	2 307.4	54.6	2 225.0	-	-	(D)	-	(D)	14.7
37322	Outboard motorboats.....	345.0	(D)	(D)	-	-	(D)	-	-	.7
37323	Inboard motorboats.....	522.3	(D)	(D)	-	-	(D)	-	-	(D)
37324	Inboard-outdrive boats.....	458.9	(D)	430.1	-	-	-	-	-	(D)
37327	Boats, n.e.c.....	368.8	(D)	359.1	-	-	-	-	-	(D)
37328	Boat repair, military and nonmilitary.....	271.2	(D)	(D)	-	-	-	-	(D)	(D)
37320	Boat building and repairing, n.s.k.....	340.1	(D)	337.5	-	-	-	-	-	(D)
3743-	Railroad equipment	2 878.9	(D)	-	2 749.6	-	-	-	(D)	127.3
37431	Locomotives, both new and rebuilt, and parts.....	1 173.2	-	-	1 101.0	-	-	-	(D)	72.0
37432	Passenger and freight train cars.....	978.9	(D)	-	957.5	-	-	-	-	(D)
37433	Street, subway, trolley, and rapid transit cars.....	663.7	(D)	-	628.0	-	-	-	-	(D)
37430	Railroad equipment, n.s.k.....	63.1	-	-	63.1	-	-	-	-	-
3751-	Motorcycles, bicycles, and parts	1 143.1	-	-	-	1 095.7	-	-	(D)	44.2
37511	Bicycles and parts.....	601.6	-	-	-	(D)	-	-	-	(D)
37512	Motorcycles and parts.....	480.6	-	-	-	(D)	-	-	(D)	(D)
37510	Motorcycles, bicycles, and parts, n.s.k.....	60.6	-	-	-	(D)	-	-	-	(D)
3792-	Travel trailers and campers	1 088.1	-	-	-	-	1 052.4	-	1.3	34.4
37921	Travel trailers.....	626.0	-	-	-	-	(D)	-	-	(D)
37922	Camping trailers, campers, pickup covers.....	340.4	-	-	-	-	322.2	-	(D)	(D)
37920	Travel trailers and campers, n.s.k.....	119.7	-	-	-	-	(D)	-	(D)	(D)
37950	Tanks and tank components	2 680.5	-	-	-	-	-	(D)	-	(D)
3799-	Transportation equipment, n.e.c.	954.3	(D)	9.5	(D)	(D)	3.1	(D)	782.5	122.0
37993	Golf carts and industrial personnel carriers.....	156.8	-	-	-	(D)	-	-	(D)	(D)
37994	Snowmobiles and parts.....	63.9	-	-	-	(D)	-	-	(D)	(D)
37996	Automobile and light truck trailers.....	272.0	-	(D)	-	(D)	(D)	-	241.3	(D)
37998	Transportation equipment, n.e.c., including all-terrain vehicles.....	389.3	(D)	(D)	(D)	5.4	(D)	(D)	261.1	90.4
37990	Transportation equipment, n.e.c., n.s.k.....	72.2	-	-	-	-	(D)	-	70.9	(D)
OTHER SHIPMENTS BY FOUR-DIGIT PRODUCT GROUP										
2399-	Fabricated textile products, n.e.c.....	(X)	-	-	-	-	(D)	-	-	(X)
2451-	Mobile homes.....	(X)	-	-	-	-	3.1	-	-	(X)
2531-	Public building and related furniture.....	(X)	-	(D)	-	(D)	-	-	(D)	(X)
3069-	Fabricated rubber products, n.e.c.....	(X)	-	(D)	-	-	-	-	-	(X)
3079-	Miscellaneous plastics products.....	(X)	-	7.0	(D)	-	-	(D)	-	(X)
3321-	Gray iron castings.....	(X)	-	-	(D)	-	-	(D)	-	(X)
3423-	Hand and edge tools, n.e.c.....	(X)	-	-	(D)	-	-	(D)	-	(X)
3429-	Hardware, n.e.c.....	(X)	(D)	-	-	-	-	(D)	(D)	(X)
3441-	Fabricated structural metal.....	(X)	24.6	(D)	(D)	-	-	-	(D)	(X)
3443-	Fabricated plate work (boiler shops).....	(X)	4.3	(D)	(D)	-	-	-	(D)	(X)
3446-	Architectural and ornamental metal work.....	(X)	-	-	(D)	-	-	-	-	(X)
3448-	Prefabricated metal buildings.....	(X)	(D)	-	(D)	-	(D)	-	-	(X)
3469-	Metal stampings, n.e.c.....	(X)	-	-	(D)	3.1	-	-	(D)	(X)
3479-	Metal coating and allied services.....	(X)	-	-	(D)	-	-	-	-	(X)
3494-	Valves and pipe fittings.....	(X)	-	-	-	-	-	(D)	(D)	(X)
3519-	Internal combustion engines, n.e.c.....	(X)	-	-	(D)	-	-	-	-	(X)
3523-	Farm machinery and equipment.....	(X)	-	-	(D)	-	(D)	-	26.0	(X)
3524-	Lawn and garden equipment.....	(X)	-	-	-	(D)	-	-	(D)	(X)
3533-	Oil field machinery.....	(X)	-	-	(D)	-	-	-	-	(X)
3535-	Conveyors and conveying equipment.....	(X)	(D)	-	-	-	-	-	-	(X)
3536-	Hoists, cranes, and monorails.....	(X)	(D)	(D)	-	-	-	-	(D)	(X)
3537-	Industrial trucks and tractors.....	(X)	(D)	(D)	(D)	-	-	-	-	(X)
3545-	Machine tool accessories.....	(X)	(D)	-	-	-	-	(D)	-	(X)
3547-	Rolling mill machinery.....	(X)	-	-	-	-	-	(D)	-	(X)
3559-	Special industry machinery, n.e.c.....	(X)	(D)	-	(D)	-	-	-	(D)	(X)
3585-	Refrigeration and heating equipment.....	(X)	-	-	-	-	-	-	(D)	(X)
3589-	Service industry machinery, n.e.c.....	(X)	(D)	-	-	-	-	-	-	(X)
3599-	Machinery, except electrical, n.e.c.....	(X)	6.8	(D)	(D)	(D)	(D)	(D)	2.9	(X)
3621-	Motors and generators.....	(X)	-	-	(D)	-	-	-	-	(X)
3713-	Truck and bus bodies.....	(X)	-	(D)	-	-	3.6	-	.6	(X)
3714-	Motor vehicle parts and accessories.....	(X)	-	(D)	-	-	(D)	-	-	(X)
3716-	Motor homes produced on purchased chassis.....	(X)	-	-	-	-	105.4	(D)	-	(X)
3724-	Aircraft engines and engine parts.....	(X)	-	-	(D)	-	-	(D)	(D)	(X)
3728-	Aircraft equipment, n.e.c.....	(X)	-	-	(D)	-	-	-	(D)	(X)
3944-	Games, toys, and children's vehicles.....	(X)	-	-	-	(D)	-	-	(D)	(X)
3949-	Sporting and athletic goods, n.e.c.....	(X)	(D)	(D)	-	2.4	-	-	-	(X)

See footnotes at end of table.

Table 5c-1. Industry-Product Analysis—Shipments by Product Class and Industry: 1982—Con.

[Million dollars. Table shows where products of an industry (referred to as primary and listed in table 6a) are made and what products are made by establishments classified in an industry. Read down an industry column to find what products are produced in an industry. Only those product groups that have at least \$2 million in shipments from establishments classified in one of industries included in this chapter are shown. Read across to determine where products of industries in this chapter are produced. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other Industries" column. Specified "Other industries" are listed in table 5c-2 if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see explanatory text. For explanation of terms, see appendixes]

1982 product code	Product group, product class, and miscellaneous receipts	All industries	Ship building and repairing (SIC 3731)	Boat building and repairing (SIC 3732)	Railroad equipment (SIC 3743)	Motorcycles, bicycles, and parts (SIC 3751)	Travel trailers and campers (SIC 3792)	Tanks and tank components (SIC 3795)	Transportation equipment, n.e.c. (SIC 3799)	Other Industries
	MISCELLANEOUS RECEIPTS									
93000 00	Receipts for work done for others on their materials	(X)	26.8	5.5	32.6	(D)	.3	(D)	2.5	(X)
99980 00	Miscellaneous receipts, including receipts for repair work, sales of scrap and refuse, etc....	(X)	2.1	1.5	(D)	2.0	5.6	(D)	4.3	(X)
99980 13	Sales of scrap and refuse	(X)	6.3	(D)	7.7	(D)	(D)	.3	.1	(X)
99980 31	Receipts for installation or construction of products of the establishment.....	(X)	-	-	-	(D)	-	-	(D)	(X)
99980 41	Receipts for research and development work ..	(X)	(D)	(D)	-	-	-	-	-	(X)
99980 61	Receipts for repair work	(X)	(D)	-	45.1	(D)	-	(D)	(D)	(X)
99980 98	Other miscellaneous receipts, including receipts for repair work, etc.	(X)	133.4	29.3	(D)	-	(D)	(D)	1.7	(X)
99989 00	Sales of products bought and resold without further manufacture, processing, or assembly at establishment	(X)	52.5	40.3	77.5	(D)	50.3	(D)	28.8	(X)

Table 5c-2. Industry—Product Analysis—Other Industries With Shipments of Primary Products: 1982

[Million dollars. Table is a continuation of table 5c-1 and shows where products of industries in this chapter (referred to as primary products and listed in table 8a) are made. To extent that some of primary products are made in industries not included in this chapter, value of such shipments is shown in "Other industries" column of table 5c-1. Specified "Other industries" are listed in this table if they account for more than \$5 million of products primary to this chapter. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

1982 product code	Other industries	Value	1982 product code	Other industries	Value
3731-	SHIP BUILDING AND REPAIRING		3792-	TRAVEL TRAILERS AND CAMPERS	
	3531 Construction machinery	(D)		3714 Motor vehicle parts and accessories	(D)
	3662 Radio and TV communication equipment	(D)		3716 Motor homes produced on purchased chassis	18.3
	3764 Space propulsion units and parts	(D)	3795-	TANKS AND TANK COMPONENTS	
3732-	BOAT BUILDING AND REPAIRING			3443 Fabricated plate work (boiler shops)	(D)
	3585 Refrigeration and heating equipment	(D)		3483 Ammunition, except for small arms, n.e.c.	(D)
3743-	RAILROAD EQUIPMENT			3519 Internal combustion engines, n.e.c.	(D)
	3325 Steel foundries, n.e.c.	(D)		3662 Radio and TV communication equipment	(D)
	3532 Mining machinery	14.3		3714 Motor vehicle parts and accessories	59.4
	3644 Noncurrent-carrying wiring devices	(D)		3724 Aircraft engines and engine parts	(D)
	3711 Motor vehicles and car bodies	(D)		3728 Aircraft equipment, n.e.c.	12.7
	3714 Motor vehicle parts and accessories	(D)	3799-	TRANSPORTATION EQUIPMENT, N.E.C.	
	3724 Aircraft engines and engine parts	(D)		3469 Metal stampings, n.e.c.	(D)
3751-	MOTORCYCLES, BICYCLES, AND PARTS			3524 Lawn and garden equipment	(D)
	3944 Games, toys, and children's vehicles	(D)		3533 Oil field machinery	(D)
				3534 Elevators and moving stairways	(D)
				3535 Conveyors and conveying equipment	(D)
				3713 Truck and bus bodies	(D)
				3714 Motor vehicle parts and accessories	7.9
				3715 Truck trailers	(D)
				3944 Games, toys, and children's vehicles	(D)

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see Introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
SHIP BUILDING AND REPAIRING							
3731- —	Total -----	(NA)	(X)	10 654.5	(NA)	(X)	6 270.3
37311 —	Nonpropelled ships, new construction -----	(NA)	(X)	1 338.6	(NA)	(X)	491.1
37311 11	Military, including hopper barges, tank barges, covered cargo barges, deck barges, dredges, car floats, etc. ----- number ..	3	(D)	(⁹)	1	(D)	(⁹)
	Nonmilitary:						
37311 21	Hopper barges ----- do ..	18	(S)	160.3	11	439	70.7
37311 31	Tank barges ----- do ..	12	**71	121.2	18	129	90.1
37311 41	Covered cargo barges ----- do ..	7	*90	36.1	9	454	86.8
37311 51	Deck barges ----- do ..	26	**156	61.4	18	119	40.3
37311 61	Dredges ----- do ..	3	(D)	(⁹)	7	13	7.4
37311 75	Drilling platforms ----- do ..	16	**178	818.7	9	59	146.2
37311 81	Other nonmilitary, nonpropelled vessels ----- do ..	14	(S)	³ 127.6	14	(S)	⁴ 47.2
37311 00	Nonpropelled ships, new construction, n.s.k. ----- do ..	(NA)	(X)	11.3	(NA)	(X)	2.4
37312 —	Self-propelled ships, U.S. military, new construction:						
37312 00	U.S. military, including combat ships, troop transport vessels, fleet auxiliaries, service craft, etc., including hovercraft -----	15	(X)	4 094.5	25	(X)	2 211.7
37313 —	Self-propelled ships, nonmilitary, new construction -----	(NA)	(X)	1 872.0	(NA)	(X)	1 917.3
	Yachts:						
37313 10	Less than 26 ft in length ----- number ..	-	-	-	21	252.6	142.0
37313 12	28 ft to less than 40 ft in length ----- do ..	-	-	-			
37313 14	40 ft to less than 85 ft in length ----- do ..	-	-	-			
37313 15	65 ft or more in length (requires a professional crew as specified by the Coast Guard) ----- do ..	11	**88	48.2	7	22	13.8
	Nonmilitary:						
37313 24	Dry bulk carriers ----- do ..	2	(X)	(⁹)			
37313 25	Container ships (lift on/lift off) and trailer ships (roll on/roll off) ----- do ..	7	(X)	(⁹)	8	(X)	174.9
37313 26	Tankers ----- do ..	4	(X)	(⁹)	12	(X)	722.2
37313 32	Fire, patrol, and pilot vessels ----- do ..	3	(X)	(⁹)	4		
37313 33	Support vessels for offshore drilling and mining ----- do ..	28	(X)	565.1	18	(X)	129.4
37313 35	Self-propelled mobile drill rigs ----- do ..	3	(X)	(⁹)	2	(X)	(⁹)
	Commercial fishing vessels:						
37313 41	Seiners ----- number ..	12	*70	98.4			
37313 43	Trawlers ----- do ..	11	*63	34.2	44	(X)	122.6
37313 49	Other ----- do ..	20	**51	58.4			
	Tugboats and towboats:						
37313 51	Harbor and offshore tugs ----- do ..	16	*71	95.8			
37313 53	River towboats ----- do ..	19	*134	145.5	43	(X)	127.7
37313 55	Integrated tug/barge combination ----- do ..	3	(S)	20.2			
37313 98	Other ships, including passenger, passenger-cargo combo, ferry boats, etc. ----- do ..	24	(X)	⁵ 774.8	19	(X)	⁶ 479.7
37313 00	Self-propelled ships, new construction, nonmilitary, n.s.k. ----- do ..	(NA)	(X)	31.2	(NA)	(X)	5.0
37314 —	Ship repair, military -----	(NA)	(X)	1 571.2	(NA)	(X)	718.0
37314 41	Conversions and reconversions ----- do ..	24	(X)	407.3	(NA)	(X)	293.2
37314 49	All other repairs ----- do ..	64	(X)	1 158.2	(NA)	(X)	422.4
37314 00	Ship repair, military, n.s.k. ----- do ..	(NA)	(X)	5.8	(NA)	(X)	2.4
37316 —	Ship repair, nonmilitary -----	(NA)	(X)	1 592.2	(NA)	(X)	789.1
	Maritime Administration:						
37316 13	Conversions and reconversions ----- do ..	5			8	(X)	19.2
37316 19	All other repairs ----- do ..	22	(X)	167.2	19	(X)	55.2
	All other:						
37316 53	Conversions and reconversions ----- do ..	14	(X)	85.5	15	(X)	31.9
37316 59	All other repairs ----- do ..	168	(X)	1 326.5	114	(X)	673.4
37316 00	Ship repair, nonmilitary, n.s.k. ----- do ..	(NA)	(X)	12.9	(NA)	(X)	9.4
37310 00	Ship building and repairing, n.s.k., typically for establishments with 20 employees or more (see note) -----	(NA)	(X)	120.8	(NA)	(X)	97.8
37310 02	Ship building and repairing, n.s.k., typically for establishments with less than 20 employees (see note) -----	(NA)	(X)	67.2	(NA)	(X)	45.4
BOAT BUILDING AND REPAIRING							
3732- —	Total -----	(NA)	(X)	2 307.4	(NA)	(X)	1 822.1
37322 —	Outboard motorboats, including commercial and military, all types, including prefabricated kits (excludes sailboats with auxiliary power and lifeboats) -----	(NA)	(X)	345.0	(NA)	(X)	297.7
	Wood or metal:						
	Runabouts:						
37322 03	14 ft 11 in. or less ----- number ..	13	**54	406			
37322 04	15 ft to 15 ft 11 in. ----- do ..	10	**29	890	16	(S)	40.6
37322 06	16 ft to 16 ft 11 in. ----- do ..	13	*26	230			
37322 08	17 ft or more ----- do ..	13	**13	863			
37322 11	Utility ----- do ..	10	*22	294	12	*20	656
37322 15	Cabin cruisers ----- do ..	1	(⁹)	16.0	1	(D)	(⁹)
37322 17	Houseboats ----- do ..	5	**1	460	(NA)	(D)	(⁹)
37322 19	Other ----- do ..	11	*4	735	(NA)	(D)	(⁹)
	Plastics (reinforced), fiberglass:						
	Runabouts:						
37322 40	14 ft 11 in. or less ----- do ..	14	**15	042			
37322 42	15 ft to 15 ft 11 in. ----- do ..	29	**8	138			
37322 44	16 ft to 16 ft 11 in. ----- do ..	29	*7	919	61	**96	082
37322 49	17 ft or more ----- do ..	49	*14	034			186.7

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see Introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	BOAT BUILDING AND REPAIRING—Con.						
37322 —	Outboard motorboats, including commercial and military, all types, including prefabricated kits (excludes sailboats with auxiliary power and lifeboats) — Con.						
	Plastics (reinforced), fiberglass — Con.						
37322 47	Utility ----- number	8	**968	5.0	10	**10 617	13.8
37322 46	Cabin cruisers ----- do.....	12	**2 287	23.4	9	**1 886	7.3
37322 53	Houseboats ----- do.....	3	(?)	(?)	(NA)	(D)	(?)
37322 55	Other ----- do.....	16	**8 156	729.1	(NA)	(D)	(?)
37322 61	Prefabricated boat construction kits ----- do.....	1	(S)	.2	2	(S)	*1.2
37322 00	Outboard motorboats, n.s.k. ----- do.....	(NA)	(X)	47.6	(NA)	(X)	*30.1
37323 —	Inboard motorboats ----- do.....	(NA)	(X)	522.3	(NA)	(X)	354.1
37323 11	Military (specially designed for the Army, Navy, or Coast Guard) ----- number.....	5	1 502	25.9			
	Nonmilitary (excluding sailboats with auxiliary power, lifeboats, and prefabricated boat construction kits):				22	(S)	53.1
	Runabouts:						
37323 30	Less than 26 ft ----- do.....	22	7 670	61.7			
37323 35	26 ft or more in length ----- do.....	6	*593	12.0			
	Cabin cruisers (including yachts):						
37323 50	Less than 26 ft in length ----- do.....	11	**736	12.2	22	**14 265	106.2
37323 54	26 ft to less than 40 ft in length ----- do.....	37	*4 651	176.5	15	*3 554	95.8
37323 58	40 ft to less than 65 ft in length ----- do.....	32	*1 013	177.4			
37323 58	65 ft or more in length (professional crew not required by Coast Guard) ----- do.....	6	*41	10.0	13	1 212	62.6
	Houseboats:						
37323 70	Less than 26 ft in length ----- do.....	2			9	(S)	12.1
37323 75	26 ft or more in length ----- do.....	5	*268	10.5			
37323 00	Inboard motorboats, n.s.k. ----- do.....	(NA)	(X)	36.1	(NA)	(X)	24.2
37324 —	Inboard-outdrive boats ----- do.....	(NA)	(X)	459.9	(NA)	(X)	367.3
	Houseboats:						
37324 10	Less than 26 ft in length ----- number.....	7	*1 223	15.3	4	(S)	5.5
37324 15	26 ft or more in length ----- do.....	5	224	6.4			
37324 18	Commercial workboats ----- do.....	27	*415	64.2			
	Other boats:				64	*50 887	341.7
37324 20	Less than 26 ft in length ----- do.....	46	*28 076	216.0			
37324 25	26 ft or more in length ----- do.....	22	4 072	149.1			
37324 00	Inboard-outdrive boats, n.s.k. ----- do.....	(NA)	(X)	6.9	(NA)	(X)	20.1
37327 —	Boats, n.e.c. (sailboats, rowboats, canoes, etc.) ----- do.....	(NA)	(X)	368.8	(NA)	(X)	282.1
	Sailboats:						
	With auxiliary power:						
37327 32	Less than 12 ft in length ----- number.....	1	(10)	(10)			
37327 35	12 ft to 15 ft 11 in. in length ----- do.....	2	(10)	(10)			
37327 38	16 ft or more ----- do.....	57	*3 687	*169.3	41	**43 092	202.9
	Without auxiliary power:						
37327 22	Less than 12 ft in length ----- do.....	3	*1 124	.5			
37327 25	12 ft to 15 ft 11 in. in length ----- do.....	10	8 410	12.0			
37327 28	16 ft or more ----- do.....	37	*11 462	58.6			
	Other boats:						
37327 41	Canoes ----- do.....	16	*74 796	23.0	14	76 207	15.1
37327 42	Rowboats ----- do.....	5	*11 682	2.8	4	27 419	5.9
37327 49	All other boats, n.e.c. ----- do.....	40	*24 899	75.5	14	29 207	24.7
37327 00	Boats, n.e.c., n.s.k. ----- do.....	(NA)	(X)	27.0	(NA)	(X)	33.6
37328 —	Boat repair, military and nonmilitary ----- do.....	(NA)	(X)	271.2	(NA)	(X)	173.2
37328 11	Repair of military boats (repair work done on Army, Navy, or Coast Guard boats) ----- do.....	24	(X)	40.7	22	(X)	18.8
37328 21	Repair of nonmilitary boats (repair work on all other boats) ----- do.....	193	(X)	225.8	130	(X)	138.0
37328 00	Boat repair, military and nonmilitary, n.s.k. ----- do.....	(NA)	(X)	4.7	(NA)	(X)	16.4
37320 00	Boat building and repairing, n.s.k., typically for establishments with 10 employees or more (see note) ----- do.....	(NA)	(X)	238.5	(NA)	(X)	247.9
37320 02	Boat building and repairing, n.s.k., typically for establishments with less than 10 employees (see note) ----- do.....	(NA)	(X)	101.6	(NA)	(X)	99.9

1982 product code	Product	1982				1977			
		Number of companies with shipments of \$100,000 or more	Product shipments ¹			Number of companies with shipments of \$100,000 or more	Product shipments ¹		
			Quantity ²	Weight ² (thousand short tons)	Value (million dollars)		Quantity ²	Weight ² (thousand short tons)	Value (million dollars)
	RAILROAD EQUIPMENT								
3743—	Total -----	(NA)	(X)	(X)	2 678.9	(NA)	(X)	(X)	4 001.9
37431 —	Locomotives, both new and rebuilt, and parts -----	(NA)	(X)	(X)	(D)	(NA)	(D)	(D)	(D)
37431 30	Locomotives: All types, except mining ----- number -----	8	(D)	(D)	(D)	6	(D)	(D)	(D)

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 product code	Product	1982			1977				
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹			
			Quantity ²	Weight ² (thousand short tons)		Value (million dollars)	Quantity ²	Weight ² (thousand short tons)	Value (million dollars)
	RAILROAD EQUIPMENT—Con.								
37431 —	Locomotives, both new and rebuilt, and parts —Con.								
37431 80	Locomotives —Con.								
	Mining type:								
	As reported in the census of manufactures ----- number..	7	225	(S)	22.8	9	(S)	(S)	25.4
	As reported in the Current Industrial Report MA-35F, Mining Machinery and Mine Processing Equipment -----	(NA)	(X)	(X)	23.2	(NA)	(X)	(X)	28.0
	Locomotives, underground mine:								
37431 13	Trolley (electric) ----- number..	(NA)	78	(X)	13.2	(NA)	183	(NA)	16.4
37431 14	Battery ----- do..	(NA)							
37431 16	Diesel ----- do..	(NA)	197	(X)	10.0	(NA)	416	(X)	11.6
	Parts for locomotives:								
37431 72	Air brake equipment -----	8	(X)	(X)	56.8	5	(X)	(X)	29.5
37431 79	Other locomotive parts, except wheels and axles -----	30	(X)	(X)	(D)	24	(X)	(X)	501.2
37431 00	Locomotives, new and rebuild, and parts, n.s.k. -----	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	1.3
37432 —	Passenger and freight train cars, new (excluding parts) -----	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	(D)
	Freight train cars, new	(NA)	(X)	(X)	(D)	(NA)	(X)	(X)	(D)
37432 11	Box (AAR types A, B) ----- number..	3	(11)	(D)	(11)	8	12 446	**417.3	432.6
37432 15	Flat (AAR types F, V) ----- do..	4	(11)	(D)	(11)	7	5 408	167.3	157.1
37432 25	Gondola (AAR types E, G) ----- do..	7	3 430	54.1	136.9	5	3 048	95.6	93.8
37432 33	Hopper, covered (AAR types L, O) ----- do..	11	4 484	(S)	208.5	7	10 302	324.0	319.3
37432 31	Hopper, open (AAR types H, J) ----- do..	11	3 247	75.8	123.1	6	7 357	244.2	211.9
37432 41	Tank (AAR type T) ----- do..	6	117 203	(S)	11377.9	6	7 578	(S)	272.5
	Other freight train cars, including refrigerator cars and industrial rail cars:								
37432 50	Suitable for common carrier service (including caboose) ----- do..	8	(S)	12.5	72.3	6	(D)	(D)	(D)
37432 52	Not suitable for common carrier service ----- do..	5	**213	(S)	11.2	8	1 110	(S)	45.5
37432 63	Passenger train cars, new ----- do..	2	(D)	(D)	(D)	5	556	(S)	240.5
37432 00	Passenger and freight train cars, new, n.s.k. -----	(NA)	(X)	(X)	2.7	(NA)	(X)	(X)	5.8
37433 —	Street, subway, trolley, and rapid transit cars, all rebuilt rail cars, and parts for all rail cars	(NA)	(X)	(X)	663.7	(NA)	(X)	(X)	899.1
37433 41	Rebuilt passenger and freight train cars ----- number..	12	15 866	(D)	31.7	15	(D)	(D)	(12)
37433 61	Self-propelled street cars, subway cars, rapid transit cars, trolley buses, etc. ----- do..	3	(13)	(13)	(13)	6	375	(S)	122.5
37433 62	Nonself-propelled street cars, subway cars, rapid transit cars, trolley buses, etc. ----- do..	3	(13)	(13)	(13)	4	309	(S)	85.4
37433 69	Other work and service railroad vehicles (excluding locomotive cranes) ----- do..	6	13997	(S)	13216.9	4	(D)	(D)	1258.5
	Parts and accessories for railroad and street cars:								
37433 71	Airbrake equipment -----	11	(X)	(X)	89.7	6	(X)	(X)	155.2
37433 79	Other railroad and street car parts and accessories -----	47	(X)	(X)	323.2	51	(X)	(X)	464.3
37433 00	Street, subway, trolley, and rapid transit cars, all rebuilt rail cars, and parts for all rail cars, n.s.k. -----	(NA)	(X)	(X)	2.1	(NA)	(X)	(X)	13.3
37430 00	Railroad equipment, n.s.k., typically for establishments with 20 employees or more (see note) -----	(NA)	(X)	(X)	45.4	(NA)	(X)	(X)	35.2
37430 02	Railroad equipment, n.s.k., typically for establishments with less than 20 employees (see note) -----	(NA)	(X)	(X)	17.7	(NA)	(X)	(X)	11.8

1982 product code	Product	1982			1977				
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹			
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)		
	MOTORCYCLES, BICYCLES, AND PARTS								
3751- —	Total -----	(NA)	(X)	1 143.1	(NA)	(X)	847.3		
37511 —	Bicycles and parts (excluding children's 2-wheel sidewalk cycles with semipneumatic tires) -----	(NA)	(X)	601.6	(NA)	(X)	490.4		
	Bicycles, complete, with one or both wheels 25 in. or more in diameter:								
37511 11	Single speed ----- thousands..	8	*347.9	23.5	6	834.1	38.3		
37511 21	Three speed ----- do..	6	*608.8	43.3	7	744.7	40.9		
37511 31	Five speed ----- do..	2	(14)	(14)	5	105.7	8.7		
37511 42	Ten speed ----- do..	7	*1 889.3	160.8					
37511 44	Over ten speed ----- do..	6	**389.1	141.7					
37511 51	Bicycles, complete, with both wheels less than 25 in. in diameter ----- do..	4	*2 779.2	206.1	6	3 411.4	152.7		
37511 59	Other bicycles, including unicycles and adult tricycles -----	7	**74.1	21.1	5	150.9	12.0		
37511 71	Parts for bicycles, including frame sets (including motorbike parts which are interchangeable with bicycle parts) -----	29	(X)	104.6	22	(X)	83.5		
37511 00	Bicycles and parts, n.s.k. -----	(NA)	(X)	.4	(NA)	(X)	1.0		
37512 —	Motorcycles, motorbikes, motor scooters, mopeds, and parts -----	(NA)	(X)	480.8	(NA)	(X)	286.1		
37512 14	Motorcycles, including 3-wheel (excluding sidecars); trail vehicles, motor scooters, and motorbikes ----- thousands..	6	(15)	(15)	6				
37512 17	Mopeds ----- do..	1	15*202.9	16358.7	6				
37512 53	Parts for motorcycles (including sidecars), trail vehicles, motorbikes, mopeds, and motor scooters, excluding motorbike parts which are interchangeable with bicycle parts -----	54	(X)	114.0	54	(NA)	285.7		

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	MOTORCYCLES, BICYCLES, AND PARTS						
3751- —	Total -----	(NA)	(X)	1 143.1	(NA)	(X)	847.3
37511 —	Bicycles and parts (excluding children's 2-wheel sidewalk cycles with semipneumatic tires) -----	(NA)	(X)	601.6	(NA)	(X)	490.4
	Bicycles, complete, with one or both wheels 25 in. or more in diameter:						
37511 11	Single speed ----- thousands..	8	*347.9	23.5	6	834.1	38.3
37511 21	Three speed ----- do..	6	*608.8	43.3	7	744.7	40.9
37511 31	Five speed ----- do..	2	(14)	5	5	105.7	8.7
37511 42	Ten speed ----- do..	7	*1 889.3	160.8	7	2 102.8	153.2
37511 44	Over ten speed ----- do..	6	**389.1	141.7			
37511 51	Bicycles, complete, with both wheels less than 25 in. in diameter ----- do..	4	*2 779.2	206.1	6	3 411.4	152.7
37511 59	Other bicycles, including unicycles and adult tricycles ----- do..	7	**74.1	21.1	5	150.9	12.0
37511 71	Parts for bicycles, including frame sets (including motorbike parts which are interchangeable with bicycle parts) -----	29	(X)	104.6	22	(X)	83.5
37511 00	Bicycles and parts, n.s.k. -----	(NA)	(X)	.4	(NA)	(X)	1.0
37512 —	Motorcycles, motorbikes, motor scooters, mopeds, and parts -----	(NA)	(X)	480.8	(NA)	(X)	286.1
37512 14	Motorcycles, including 3-wheel (excluding sidecars); trail vehicles, motor scooters, and motorbikes ----- thousands..	6	(15)	(15)	6		
37512 17	Mopeds ----- do..	1	15*202.9	16358.7	6		
37512 53	Parts for motorcycles (including sidecars), trail vehicles, motorbikes, mopeds, and motor scooters, excluding motorbike parts which are interchangeable with bicycle parts -----	54	(X)	114.0	54	(NA)	285.7

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see Introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	MOTORCYCLES, BICYCLES, AND PARTS—Con.						
37512 —	Motorcycles, motorbikes, motor scooters, mopeds, and parts —Con.	(NA)	(X)	8.0	(NA)	(X)	.5
37512 00	Motorcycles and parts, n.s.k. -----	(NA)	(X)	8.0	(NA)	(X)	.5
37510 00	Motorcycles, bicycles, and parts, n.s.k., typically for establishments with 10 employees or more (see note) -----	(NA)	(X)	29.2	(NA)	(X)	23.0
37510 02	Motorcycles, bicycles, and parts, n.s.k., typically for establishments with less than 10 employees (see note) -----	(NA)	(X)	31.6	(NA)	(X)	47.7
	TRAVEL TRAILERS AND CAMPERS						
3792- —	Total -----	(NA)	(X)	1 088.1	(NA)	(X)	1 477.6
37921 —	Travel trailers -----	(NA)	(X)	628.0	(NA)	(X)	882.2
	Conventional travel trailers:						
37921 12	Less than 20 ft in length ----- thousands..	28	8.2	44.8			
37921 14	20 ft to 24 ft 11 in. in length ----- do..	25	8.4	58.4			
37921 16	25 ft to 29 ft 11 in. in length ----- do..	29	10.8	90.0			
37921 18	30 ft or more, including park models ----- do..	49	31.2	292.2	(NA)	(S)	871.3
	Fifth wheel travel trailers:						
37921 25	Less than 30 ft in length ----- do..	24	6.7	59.9			
37921 28	30 ft or more in length ----- do..	23	3.9	56.0			
37921 00	Travel trailers, n.s.k. -----	(NA)	(X)	26.8	(NA)	(X)	10.9
37922 —	Camping trailers, campers, pickup covers, and parts for all travel trailers and campers -----	(NA)	(X)	340.4	(NA)	(X)	426.2
37922 42	Fold down camping trailers ----- thousands..	11	34.3	84.7	19	*50.6	89.5
37922 44	Truck (pickup) campers (for sliding on and off trucks) ----- do..	36	*10.6	31.5	89	*50.8	99.8
37922 47	Truck (pickup) caps or box covers ----- do..	81	**297.3	124.9	66	*286.5	84.7
37922 59	Parts and components for travel and camping trailers, truck (pickup) campers, and truck (pickup) caps, including chassis, frames, roof, belly pans, landing gear, etc. (excluding appliances and furnishings) -----	42	(X)	93.6	54	(X)	143.5
37922 00	Camping trailers, campers, pickup covers, and parts, n.s.k. -----	(NA)	(X)	5.6	(NA)	(X)	8.7
37920 00	Travel and camping trailers, n.s.k., typically for establishments with 10 employees or more (see note) -----	(NA)	(X)	85.1	(NA)	(X)	115.5
37920 02	Travel and camping trailers, n.s.k., typically for establishments with less than 10 employees (see note) -----	(NA)	(X)	34.6	(NA)	(X)	53.7
	TANKS AND TANK COMPONENTS						
3795- —	Total -----	(NA)	(X)	2 680.5	(NA)	(X)	1 015.1
37950 —	Tanks and tank components:						
	Tanks and parts:						
37950 11	Medium and heavy -----	48	(X)	1 497.2	26	(NA)	601.8
37950 15	Light -----	9	(X)	215.5	(NA)	(X)	49.9
37950 51	Self-propelled weapons and parts -----	2	(X)	215.5	(NA)	(X)	49.9
37950 98	Other full tracked combat vehicles and parts, including armored utility vehicles -----	22	(X)	944.7	14	(X)	352.2
37950 00	Tanks and tank components, n.s.k., typically for establishments with 10 employees or more (see note) -----	(NA)	(X)	23.1	(NA)	(X)	10.0
37950 02	Tanks and tank components, n.s.k., typically for establishments with less than 10 employees (see note) -----	(NA)	(X)	-	(NA)	(X)	1.2
	TRANSPORTATION EQUIPMENT, N.E.C.						
3799- —	Total -----	(NA)	(X)	954.3	(NA)	(X)	700.3
37993 —	Golf carts and industrial in-plant personnel carriers, self- propelled, and parts -----	(NA)	(X)	156.8	(NA)	(X)	108.2
37993 82	Self-propelled golf carts (electric and gasoline powered) for carrying passengers and/or industrial in-plant personnel carriers ----- thousands..	12	68.1	139.4	8	63.1	82.9
37993 84	Parts for self-propelled golf carts and/or industrial in-plant personnel carriers -----	8	(X)	17.5	5	(X)	23.3
37993 00	Self-propelled golf carts and personnel carriers, n.s.k. -----	(NA)	(X)	-	(NA)	(X)	2.0
37994 —	Snowmobiles, self-propelled and parts -----	(NA)	(X)	63.9	(NA)	(X)	157.1
37994 92	Self-propelled snowmobiles (electric and gasoline driven), ski-supported ----- thousands..	4	*22.5	58.5	7	118.0	124.8
37994 94	Parts for self-propelled snowmobiles -----	4	(X)	5.4	12	(X)	32.1
37994 00	Self-propelled snowmobiles and parts, n.s.k. -----	(NA)	(X)	-	(NA)	(X)	.2
37996 —	Automobile and light truck trailers -----	(NA)	(X)	272.0	(NA)	(X)	156.6
37996 30	Horse trailers, excluding those pulled by truck tractors ----- thousands..	27	*17.3	39.2	(D)	(16)	(16)
37996 32	Boat trailers ----- do..	52	**191.8	107.4	69	*329.2	113.6
37996 34	Motorcycle and snowmobile trailers ----- do..	4	*4.8	1.7	(D)	(16)	(16)
37996 36	Mobile equipment trailers ----- do..	4	**2.6	6.9	(D)	(16)	(16)
37996 39	Other, including general utility, commercial display, etc. ----- do..	52	(S)	116.8	36	(S)	1643.0
37996 00	Automobile and light truck trailers, n.s.k. -----	(NA)	(X)	-	(NA)	(X)	-

See footnotes at end of table.

Table 6a. Product and Product Classes—Quantity and Value of Shipments by All Producers: 1982 and 1977—Con.

[Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included. For further explanation, see Value of Shipments in appendix. For meaning of abbreviations and symbols, see Introductory text]

1982 product code	Product	1982			1977		
		Number of companies with shipments of \$100,000 or more	Product shipments ¹		Number of companies with shipments of \$100,000 or more	Product shipments ¹	
			Quantity ²	Value (million dollars)		Quantity ²	Value (million dollars)
	TRANSPORTATION EQUIPMENT, N.E.C.—Con.						
37998 —	Transportation equipment, n.e.c., including all terrain vehicles -----	(NA)	(X)	389.3	(NA)	(X)	197.0
37998 35	Chassis for automobile and light truck trailers (except travel and camping), sold separately ----- thousands...	1	(D)	(17)	-	-	-
37998 51	Handcarts and pushcarts, including parts and attachments ----- do...	3	(S)	3.7	7	(X)	17.8
37998 53	Wheelbarrows ----- do...	4	**1	044.1	5	1	447.2
37998 62	All terrain vehicles, gasoline or electric driven, for transport of people or goods designed to traverse all types of terrain (off-the-highway operating or flotation type wheels or full tracks) ----- do...	12	*18.2	35.6	10	(S)	23.6
37998 64	Parts for all terrain vehicles -----	10	(X)	14.2	9	(X)	11.1
37998 80	Trailer hitches (for travel trailers, automobile trailers, and light duty truck trailers) ----- thousands...	5	(S)	17.7	(X)	(18)	(18)
37998 82	Trailer tongue couplers ----- do...	1	(D)	(17)	(X)	(18)	(18)
37998 84	Trailer hitch balls ----- do...	2	(D)	(17)	(X)	(18)	(18)
37998 86	Towbars ----- do...	1	(D)	(17)	(X)	(18)	(18)
37998 90	Other miscellaneous transportation equipment ----- do...	36	(S)	17135.0	30	(X)	18103.6
37998 86	Parts for automobile and light truck trailers and other transportation equipment -----	47	(X)	121.0	(X)	(18)	(18)
37998 00	Transportation equipment, n.e.c., n.s.k. -----	(NA)	(X)	28.7	(NA)	(X)	9.3
37990 00	Transportation equipment n.e.c., n.s.k., typically for establishments with 10 employees or more (see note) -----	(NA)	(X)	52.2	(NA)	(X)	51.6
37990 02	Transportation equipment, n.e.c., n.s.k., typically for establishments with less than 10 employees (see note) -----	(NA)	(X)	20.0	(NA)	(X)	29.8

Note: In 1982 Census of Manufactures, data for establishments of small single-unit companies with up to 20 employees were estimated from administrative-record data rather than data actually collected from respondents. Employment cutoff used for administrative records for each industry and shipments figures are included in code ending with "002". In both 1982 and 1977 Censuses of Manufactures, products not completely identified on standard forms were coded in appropriate product class (five-digit) followed by "00" or to appropriate product group code (four-digit) followed by "000".

¹Data reported by all producers, not just those with shipments of \$100,000 or more.

²For some establishments, data have been estimated from central unit values which are based on quantity-value relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

³For 1982, data for product codes 37311 11, 37311 61, and 37311 81 are combined to avoid disclosing data for individual companies.

⁴For 1977, data for product code 37311 11 was combined with product code 37311 81 to avoid disclosing data for individual companies.

⁵For 1982, product codes 37313 24, 37313 25, 37313 26, 37313 32, 37313 35, and 37313 98 are combined to avoid disclosing data for individual companies.

⁶For 1977, data for product code 37313 35 was included with product code 37313 98.

⁷For 1982, product codes 37322 15, 37322 53, and 37322 55 are combined to avoid disclosing data for individual companies.

⁸For 1977, data for product codes 37322 15 and 37322 61 were combined to avoid disclosing data for individual companies.

⁹For 1977, product codes 37322 17, 37322 19, 37322 53, and 37322 55 were included with product code 37322 00.

¹⁰For 1982, product codes 37327 32, 37327 35, and 37327 38 are combined to avoid disclosing data for individual companies.

¹¹For 1982, product codes 37432 11, 37432 15, and 37432 41 are combined to avoid disclosing data for individual companies.

¹²For 1977, product codes 37433 41 and 37433 69 were combined to avoid disclosing data for individual companies.

¹³For 1982, product codes 37433 61, 37433 62, and 37433 69 are combined to avoid disclosing data for individual companies.

¹⁴For 1982, product code 37511 31 is combined with product code 37511 44 to avoid disclosing data for individual companies.

¹⁵For 1982, product code 37512 14 is combined with product code 37512 17 to avoid disclosing data for individual companies.

¹⁶For 1977, product codes 37996 30, 37996 34, and 37996 36 were not collected separately. Combined data are shown with product code 37996 39.

¹⁷For 1982, product codes 37998 35, 37998 82, 37998 84, 37998 86, and 37998 90 are combined to avoid disclosing data for individual companies.

¹⁸For 1977, product codes 37998 80, 37998 82, 37998 84, 37998 86, and 37998 88 were included with product code 37998 90.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1982 and 1977

[Million dollars. Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by type" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1982. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Product class and geographic area	1982 value of product shipments	1977 value of product shipments	Product class and geographic area	1982 value of product shipments	1977 value of product shipments
37311, NONPROPELLED SHIPS, NEW CONSTRUCTION			37324, INBOARD-OUTDRIVE BOATS		
United States	1 336.8	491.1	United States	459.9	(NA)
Alabama	27.3	12.5	California	13.1	(NA)
Florida	31.5	(CC)	Florida	76.7	(NA)
Louisiana	254.6	104.1	Louisiana	16.8	(NA)
Oregon	44.1	4.0	Maine	2.5	(NA)
Tennessee	33.6	(FF)	Massachusetts	2.1	(NA)
Texas	344.3	82.8	Oregon	7.6	(NA)
			Tennessee	(D)	(NA)
37312, SELF-PROPELLED SHIPS, MILITARY, NEW			Texas	7.5	(NA)
United States	4 094.5	2 211.7	Washington	62.4	(NA)
Washington	778.2	(GG)			
37313, SELF-PROPELLED SHIPS, NONMILITARY, NEW			37327, BOATS, N.E.C.		
United States	1 872.0	1 917.3	United States	368.8	282.1
Alabama	198.8	38.5	California	74.6	97.8
Florida	90.4	102.9	Florida	109.1	37.3
Louisiana	577.6	441.5	Indiana	13.6	12.5
Mississippi	180.0	33.3	Louisiana	3.8	2.7
Oregon	4.6	(FF)	Maine	11.2	5.5
Texas	51.2	65.1	Massachusetts	29.1	17.5
Washington	139.0	65.4	Michigan	6.7	3.3
Wisconsin	28.2	(GG)	Minnesota	4.6	8.3
			New Jersey	3.3	(BB)
37314, SHIP REPAIR, MILITARY			New York	9.0	8.0
United States	1 571.2	718.0	Rhode Island	43.1	22.4
California	463.0	190.0	South Carolina	3.5	(AA)
Florida	52.2	24.0	Washington	12.1	8.2
Louisiana	14.4	(CC)			
South Carolina	73.1	(EE)	37328, BOAT REPAIR, MILITARY AND NONMILITARY		
37316, SHIP REPAIR, NONMILITARY			United States	271.2	173.2
United States	1 592.2	789.1	Alabama	3.7	.7
Alabama	46.3	(NA)	California	57.6	21.3
California	123.9	118.5	Connecticut	2.6	2.8
Connecticut	(D)	(NA)	Florida	38.6	19.8
Florida	208.5	74.4	Louisiana	18.1	30.1
Georgia	12.8	(NA)	Maine	2.0	2.1
Hawaii	(D)	(NA)	Maryland	3.2	2.0
Kentucky	(D)	(NA)	Massachusetts	6.1	3.2
Louisiana	221.6	129.0	New Jersey	8.8	17.4
Maryland	(D)	(NA)	New York	7.4	11.4
Massachusetts	(D)	3.9	Oregon	8.3	2.9
Michigan	(D)	(NA)	Texas	8.3	12.3
Mississippi	32.6	(NA)	Virginia	26.7	7.1
Missouri	(D)	(NA)	Washington	20.3	12.6
New Jersey	85.1	34.1			
New York	66.4	39.6	37433, STREET, SUBWAY, TROLLEY, AND RAPID TRANSIT CARS		
Ohio	39.9	(NA)	United States	663.7	899.1
Oregon	(D)	(NA)	Illinois	87.0	222.9
Pennsylvania	10.1	14.4	Ohio	29.4	78.9
South Carolina	7.1	(NA)	Pennsylvania	331.2	220.0
Tennessee	(D)	(NA)			
Texas	290.6	65.2	37511, BICYCLES AND PARTS		
Virginia	122.6	(NA)	United States	601.8	490.4
Washington	46.2	39.0	California	22.7	(FF)
Wisconsin	(D)	(NA)			
37322, OUTBOARD MOTORBOATS			37512, MOTORCYCLES AND PARTS		
United States	345.0	297.7	United States	480.8	286.1
Arkansas	33.0	19.5	California	38.1	23.9
California	13.5	17.4	Connecticut	2.4	5.9
Florida	42.1	34.8	Illinois	4.9	(EE)
Georgia	3.3	3.3	Wisconsin	8.4	13.4
Indiana	32.9	33.1			
Louisiana	22.3	16.2	37921, TRAVEL TRAILERS		
Michigan	5.6	9.0	United States	628.0	862.2
Minnesota	30.7	15.8	Arizona	5.9	(NA)
Missouri	18.1	8.6	California	85.7	159.7
North Carolina	12.3	(BB)	Idaho	12.9	24.0
Ohio	7.4	(NA)	Indiana	252.5	309.9
Oregon	4.5	1.2	Kansas	31.8	29.9
Tennessee	33.0	24.8	Michigan	22.2	42.0
Texas	20.0	40.0	Ohio	27.7	(FF)
Washington	13.1	8.7	Oregon	37.4	52.0
Wisconsin	5.6	8.4	Pennsylvania	36.8	39.3
37323, INBOARD MOTORBOATS					
United States	522.3	(NA)			
California	52.5	(NA)			
Florida	138.4	(NA)			
Georgia	2.0	(NA)			
Indiana	12.5	(NA)			
New Jersey	44.8	(NA)			
Tennessee	11.1	(NA)			
Washington	53.2	(NA)			

See footnotes at end of table.

Table 6b. Product Classes—Value of Shipments by All Producers for Specified States: 1982 and 1977—Con.

[Million dollars. Product classes covered are those that are economically significant and whose production is geographically dispersed, provided dispersion is not approximated by data in table 2. Also, product classes are not shown if they are miscellaneous or "not specified by type" classes. Statistics for some States are withheld because they are either less than \$2 million in product class shipments or they disclose data for individual companies in 1982. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

Product class and geographic area	1982 value of product shipments	1977 value of product shipments	Product class and geographic area	1982 value of product shipments	1977 value of product shipments
37922, CAMPING TRAILERS, CAMPERS, PICKUP COVERS			37996, AUTOMOBILE AND LIGHT TRUCK TRAILERS—Con.		
United States	340.4	428.2	Iowa	11.3	(NA)
Arizona	4.3	6.9	North Carolina	11.4	(NA)
Arkansas	2.9	(BB)	Ohio	17.7	(NA)
California	41.6	69.0	Oklahoma	25.4	(NA)
Indiana	115.8	123.4	Pennsylvania	12.3	(NA)
Iowa	4.9	(EE)	Tennessee	6.2	(NA)
Michigan	39.3	41.2	Texas	49.2	(NA)
Oregon	8.1	13.4			
Pennsylvania	34.0	30.6	37998, TRANSPORTATION EQUIPMENT, N.E.C., INCLUDING ALL-TERRAIN VEHICLES		
Tennessee	5.8	(CC)	United States	389.3	(NA)
Texas	7.8	12.9	Alabama	28.0	(NA)
Washington	2.1	7.1	California	41.2	(NA)
			Florida	9.5	(NA)
37996, AUTOMOBILE AND LIGHT TRUCK TRAILERS			Illinois	10.9	(NA)
United States	272.0	(NA)	Indiana	42.1	(NA)
California	14.9	(NA)	Iowa	3.4	(NA)
Florida	13.8	(NA)	Louisiana	5.5	(NA)
Georgia	4.1	(NA)	Michigan	24.1	(NA)
Indiana	10.8	(NA)	New York	4.4	(NA)
			Ohio	7.6	(NA)
			Oregon	6.9	(NA)
			Texas	49.4	(NA)
			Wisconsin	13.1	(NA)

Note: For 1977, the following value ranges (in million dollars) substitute for actual figures withheld to avoid disclosing data for individual companies: AA—less than \$2.0 but not 0; BB—\$2.0 to \$4.9; CC—\$5.0 to \$9.9; EE—\$10.0 to \$19.9; FF—\$20.0 to \$49.9; GG—\$50.0 or more.

Table 6c. Product Classes—Value Shipped by All Producers: 1982 and Earlier Years

[Million dollars. For meaning of abbreviations and symbols, see introductory text. For explanation of terms, see appendixes]

1982 product code	Product class	1982	1981 ¹	1980 ¹	1979 ¹	1978 ¹	1977	1972	1967
3731-	Ship building and repairing	10 654.5	10 689.7	8 888.7	7 466.2	6 688.4	6 270.3	3 200.7	2 537.9
37311	Nonpropelled ships, new construction	1 336.6	2 546.7	1 645.1	1 044.9	724.3	491.1	361.9	149.0
37312	Self-propelled ships, military, new	4 094.5	3 351.2	2 903.0	2 511.7	2 281.7	2 211.7	1 100.0	973.8
37313	Self-propelled ships, nonmilitary, new	1 872.0	1 873.0	1 810.4	1 889.8	1 861.1	1 917.3	816.1	361.8
37314	Ship repair, military	1 571.2	1 251.3	1 133.5	968.6	911.7	718.0	386.5	423.0
37316	Ship repair, nonmilitary	1 592.2	1 567.7	1 335.2	997.7	808.5	789.1	484.2	407.2
37310	Ship building and repairing, n.s.k.	188.0	100.0	61.5	53.5	(S)	143.2	52.1	43.2
3732-	Boat building and repairing	2 307.4	2 249.1	2 126.5	2 238.1	2 103.4	1 822.1	1 031.1	570.8
37322	Outboard motorboats	345.0	291.5	267.3	299.3	(S)	297.7	233.9	70.2
37323	Inboard motorboats	522.3	415.7	417.2	492.4	526.3	354.1	380.9	259.0
37324	Inboard-outdrive boats	459.9	445.6	438.5	514.0	448.9	367.3	130.4	45.6
37327	Boats, n.e.c.	368.8	424.9	404.8	370.3	342.2	282.1	74.3	82.2
37328	Boat repair, military and nonmilitary	271.2	294.2	238.0	210.5	215.6	173.2	211.6	114.0
37320	Boat building and repairing, n.s.k.	340.1	377.2	362.7	351.6	(S)	347.8		
3743-	Railroad equipment	2 878.9	4 597.1	7 173.3	7 313.1	5 207.3	4 001.9	2 284.2	1 943.5
37431	Locomotives, both new and rebuilt, and parts	2 152.0	3 775.4	6 115.9	5 970.4	4 040.1	3 055.8	1 759.4	569.1
37432	Passenger and freight train cars								
37433	Street, subway, trolley, and rapid transit cars								
37430	Railroad equipment, n.s.k.								
3751-	Motorcycles, bicycles, and parts	1 143.1	1 159.8	1 160.3	1 111.8	1 000.5	847.3	540.8	226.3
37511	Bicycles and parts	601.6	733.0	649.3	732.5	540.4	490.4	396.8	176.6
37512	Motorcycles and parts	480.8	368.2	464.4	341.9	390.3	286.1	112.3	45.5
37510	Motorcycles, bicycles, and parts, n.s.k.	60.8	58.6	46.6	37.3	(S)	70.7	31.5	4.3
3792-	Travel trailers and campers	1 068.1	951.3	845.2	1 068.1	1 538.9	1 477.6	1 276.5	400.6
37921	Travel trailers	628.0	548.8	453.4	607.0	946.2	882.2	619.9	186.6
37922	Camping trailers, campers, pickup covers	340.4	306.3	284.3	351.8	455.6	426.2	273.3	115.6
37920	Travel trailers and campers, n.s.k.	119.7	96.3	107.5	109.3	(S)	169.2	383.3	98.6
37950	Tanks and tank components	2 680.5	1 738.6	1 368.0	1 084.3	1 207.6	1 015.1	285.1	409.3
3799-	Transportation equipment, n.e.c.	954.3	843.7	838.3	953.2	832.2	700.3	753.4	257.6
37993	Golf carts and industrial personnel carriers	156.8	167.0	156.4	122.5	111.6	108.2	54.1	36.3
37994	Snowmobiles and parts	63.9	40.4	98.1	277.5	208.9	157.1	203.1	36.3
37996	Automobile and light truck trailers	272.0	596.9	549.5	527.9	(S)	353.6	436.7	151.3
37998	Transportation equipment, n.e.c., including all-terrain vehicles	389.3							
37990	Transportation equipment, n.e.c., n.s.k.	72.2							

¹Figures are estimates derived from a representative sample of manufacturing establishments canvassed in annual survey of manufactures and, therefore, may differ from results that would be obtained from a complete canvass of all manufacturing establishments. Standard errors associated with estimates are published in annual survey of manufactures volumes for this period.

Table 7. Materials Consumed by Kind: 1982 and 1977

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3731, SHIP BUILDING AND REPAIRING				
	Materials, parts, containers, and supplies -----	(X)	3 958.0	(X)	2 416.2
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bar and bar shapes ----- 1,000 s tons..	**59.3	32.4	**58.4	22.4
331012	Sheet and strip ----- do..	(S)	34.3	**18.2	7.6
331013	Plates ----- do..	*505.1	265.0	*1 037.5	367.8
331015	Structural shapes ----- do..	128.0	65.9	*188.2	69.1
331017	Wire and wire products ----- do..	*21.5	15.4	**5.3	5.2
331019	All other carbon steel mill shapes and forms ----- do..	**59.5	31.0	**39.6	17.4
331020	Alloy steel, except stainless ----- do..	114.8	69.7	25.7	23.6
	Stainless steel:				
331033	Sheet and strip ----- do..	**3.4	13.6	(S)	3.4
331050	All other stainless steel mill shapes and forms ----- do..	**3.3	9.5	*2.5	6.1
335792	Insulated copper wire and cable, except magnet wire ----- million lb..	(S)	22.3	12.1	17.2
	Copper and copper-base alloy:				
335728	Bare wire for electrical conduction only ----- do..	(S)	7.3	**3.9	2.5
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do..	(S)	1.7	(S)	1.8
335143	Plate, sheet, and strip, including military cups and discs ----- do..	(S)	1.5	1.9	2.3
335152	Pipe and tube ----- do..	*34.3	31.0	6.5	7.6
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do..	**11.9	19.6	15.8	17.9
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do..	*3.4	5.7	6.7	7.1
335008	All other aluminum mill shapes and forms, wire, rolled rod and bar, powder, welded tubing, etc. ----- do..	(S)	.9	.8	1.2
	Castings, rough and semifinished:				
332011	Iron (gray and malleable):				
	Purchased ----- 1,000 s tons..	**5.4	3.2	(X)	(*)
332045	Produced and consumed ----- do..	-	(X)	(X)	(X)
	Steel:				
	Purchased ----- do..	(S)	12.9	*9.3	12.2
336100	Produced and consumed ----- do..	-	(X)	(S)	(X)
	Aluminum and aluminum-base alloy:				
336200	Purchased ----- million lb..	(S)	1.3	1.6	1.2
	Produced and consumed ----- do..	-	(X)	(S)	(X)
	Copper and copper-base alloy:				
	Purchased ----- do..	(S)	1.2	1.2	1.6
336902	Produced and consumed ----- do..	-	(X)	(S)	(X)
	Other nonferrous:				
	Purchased ----- million lb..	(D)	(*)	(X)	(*)
	Produced and consumed ----- do..	(Z)	(X)	(X)	(X)
	Engines:				
351920	Diesel and semidiesel:				
	Purchased ----- thousands..	(S)	121.1	3.3	71.9
351901	Produced and consumed ----- do..	(Z)	(X)	(S)	(X)
	Gasoline and other carburetor:				
	Purchased ----- do..	(S)	2.2	*3.3	12.3
362120	Produced and consumed ----- do..	(Z)	(X)	(S)	(X)
	Integral horsepower electric motors and generators (1 hp or more):				
	Purchased ----- do..	(S)	22.3	(S)	18.3
242103	Produced and consumed ----- do..	(Z)	(X)	(S)	(X)
243056	Dressed lumber ----- million bd ft..	46.5	14.0	28.7	13.1
322931	Plywood ----- do..	(X)	4.7	(X)	8.6
282104	Glass fiber (both textile type, bonded mat type, etc.) ----- million lb..	(S)	2.3	*9.2	5.7
	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- do..	(S)	1.8	11.0	4.8
345001	Bolts, nuts, screws, rivets, and screw machine products ----- do..	(X)	38.2	(X)	18.1
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets ----- do..	(X)	4.4	(X)	2.4
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes ----- do..	(X)	7.3	(X)	3.7
285101	Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products ----- 1,000 gals..	(S)	64.6	(X)	27.1
356201	Ball and roller bearings ----- do..	(X)	7.8	(X)	5.9
356601	Speed changers, and industrial high-speed drives ----- do..	(X)	18.6	(X)	7.6
346901	Metal stampings ----- do..	(X)	1.6	(X)	2.8
369401	Engine electrical equipment, (including spark plugs, magnetos, generators, starters, etc.) ----- do..	(X)	30.4	(X)	22.1
344131	Fabricated structural metal for ships and barges ----- do..	(X)	103.6	(X)	*112.0
344331	Boilers, condensers, and parts thereof ----- do..	(X)	38.7	(X)	*32.0
349421	Fluid power (hydraulic and pneumatic) valves ----- do..	(X)	38.3	(X)	(*)
349461	Fluid power (hydraulic and pneumatic) hose or tube fittings and assemblies ----- do..	(X)	36.2	(X)	(*)
351121	Steam engines and turbines ----- do..	(X)	5.0	(X)	*59.0
353101	Construction machinery and parts thereof, including shipwrenches, cranes, derricks, and capstans ----- do..	(X)	206.3	(X)	*81.0
362203	Industrial controls ----- do..	(X)	48.7	(X)	*51.0
366251	Marine navigation equipment operating by radio signal ----- do..	(X)	29.5	(X)	(*)
366001	Electronic communication equipment ----- do..	(X)	26.9	(X)	(*)
336004	Ship propellers and propeller nozzles ----- do..	(X)	22.9	(X)	(*)
970099	All other materials and components, parts, containers, and supplies ----- do..	(X)	41 197.6	(X)	*1 116.3
971000	Materials, parts, containers, and supplies, n.s.k. ² ----- do..	(X)	1 217.6	(X)	145.4

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see Introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3732, BOAT BUILDING AND REPAIRING				
	Materials, parts, containers, and supplies -----	(X)	1 163.0	(X)	939.9
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bar and bar shapes ----- 1,000 s tons..	(S)	1.1	(S)	1.3
331012	Sheet and strip ----- do..	**4.3	3.2	(S)	1.0
331013	Plates ----- do..	**20.2	10.3	(S)	4.5
331015	Structural shapes ----- do..	**3.8	1.4	(S)	2.4
331055	All other carbon steel mill shapes and forms ----- do..	1.1	1.6	(S)	.8
331020	Alloy steel, except stainless ----- do..	-	(Z)	(S)	.5
331031	Stainless steel ----- do..	1.6	1.9	(S)	2.3
335792	Insulated copper wire and cable, except magnet wire (quantity of copper conten ----- million lb..	**1.6	2.0	(S)	1.7
335105	Copper and copper-base alloy ----- do..	(S)	.5	(S)	1.1
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do..	16.9	17.1	**24.5	19.6
335405	Extruded shapes, rod, bar, pipe, etc. ----- do..	(S)	9.4	**10.8	10.7
335008	All other aluminum mill shapes and forms (wire, rolled rod, etc.) ----- do..	(S)	1.1	(S)	.7
	Castings (rough and semifinished):				
332011	Iron (gray and malleable):				
	Purchased ----- do..	*1.0	.8	(X)	(⁶)
	Produced and consumed ----- do..	-	(X)	(X)	(X)
332045	Steel:				
	Purchased ----- 1,000 s tons..	(S)	.3	(S)	.9
	Produced and consumed ----- do..	-	(X)	(S)	(X)
336100	Aluminum and aluminum-base alloy:				
	Purchased ----- million lb..	(S)	2.3	(S)	3.2
	Produced and consumed ----- do..	-	(X)	(S)	(X)
336200	Copper and copper-base alloy:				
	Purchased ----- do..	.4	1.5	(S)	.8
	Produced and consumed ----- do..	-	(X)	(S)	(X)
336902	Other nonferrous:				
	Purchased ----- do..	(S)	5.3	(X)	(⁶)
	Produced and consumed ----- do..	-	(X)	(X)	(X)
	Engines:				
351920	Diesel and semidiesel:				
	Purchased ----- thousands..	**9.6	65.8	**4.0	18.3
	Produced and consumed ----- do..	(Z)	(X)	(S)	(X)
351901	Gasoline and other carburetor:				
	Purchased ----- do..	32.2	97.1	*73.1	146.6
	Produced and consumed ----- do..	(Z)	(X)	(S)	(X)
362120	Integral horsepower electric motors and generators (1 hp or more):				
	Purchased ----- do..	*2.4	5.7	3.9	7.4
	Produced and consumed ----- do..	(S)	(X)	(S)	(X)
369401	Engine electrical equipment, including spark plugs, magnetos, generators, starters, etc. -----	(X)	6.8	(X)	4.5
356601	Speed changers, gears, and industrial high-speed drivers -----	(X)	1.3	(X)	(⁶)
356831	Drive shafts and couplings -----	(X)	2.4	(X)	(⁶)
356832	Transmissions and gear drives -----	(X)	3.8	(X)	(⁶)
336001	Boat propellers ----- thousands..	(S)	4.6	(X)	(⁶)
242103	Dressed lumber ----- million bd ft..	(S)	15.4	(S)	15.0
243056	Plywood -----	(X)	21.3	(X)	26.8
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- million lb..	**59.7	35.8	(S)	65.0
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	6.9	(X)	7.1
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets -----	(X)	3.3	(X)	.7
322931	Glass fiber (both textile type, bonded mat type, etc.) ----- million lb..	(S)	41.2	(S)	38.8
356601	Speed changers, gears, and industrial high speed drivers -----	(X)	1.3	(X)	3.5
285101	Paints, lacquers, varnishes, enamels, japans, and shellacs ----- 1,000 gal..	(S)	17.1	(X)	8.5
345001	Bolts, nuts, screws, rivets, and screw machine products -----	(X)	9.7	(X)	8.3
342971	Marine hardware (including shackles, rope shackles, rope sockets, tackle blocks, rope clips, clamps, etc.) -----	(X)	42.4	(X)	(⁶)
356151	Bilge pumps -----	(X)	1.6	(X)	(⁶)
227001	Carpeting -----	(X)	6.8	(X)	*10.0
239401	Canvas products -----	(X)	8.7	(X)	*10.0
366251	Marine nautical and navigation equipment operating by radio signal -----	(X)	3.9	(X)	(⁶)
970099	All other materials and components, parts, containers, and supplies -----	(X)	189.3	(X)	*245.1
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	511.0	(X)	273.4
	INDUSTRY 3743, RAILROAD EQUIPMENT				
	Materials, parts, containers, and supplies -----	(X)	1 646.1	(X)	2 275.8
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons..	**34.3	17.5	**89.3	36.4
331012	Sheet and strip ----- do..	*61.0	29.4	*274.4	98.1
331013	Plates ----- do..	*196.0	106.3	*617.3	227.3
331015	Structural shapes ----- do..	*43.2	23.6	**217.8	77.0
331017	Wire and wire products ----- do..	**16.1	3.1	(S)	5.2
331019	All other carbon steel mill shapes and forms ----- do..	(S)	9.0	*89.7	44.2
331020	Alloy steel, except stainless ----- do..	(S)	4.0	**6.6	6.7
	Stainless steel:				
331033	Sheet and strip ----- do..	-	-	-	-
331050	All other ----- do..	*9.6	17.8	(S)	13.7
	Copper and copper-base alloy:				
335728	Bare wire (for electrical conduction only) ----- million lb..	-	-	(S)	13.8
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do..	14.6	17.0	(D)	(D)

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3743, RAILROAD EQUIPMENT—Con.				
	Mill shapes and forms, except castings and forgings — Con.				
	Copper and copper-base alloy — Con.				
335143	Plate, sheet, and strip, including military cups and discs ---- million lb..	36.9	4.4	(S)	.4
335152	Pipe and tube ----- do..	(S)	1.1	*4.8	2.7
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do..	(S)	2.1	4.6	4.7
335405	Extruded shapes including extruded rod, bar, pipe, tube, etc., ----- do..	(S)	1.5	(X)	(7)
335008	All other welded tubing etc (wire, rolled rod and bar, powder, welded tubi etc.) ----- do..	(S)	.2	**3.3	73.8
	Castings (rough and semifinished):				
332011	Iron (gray and malleable):				
	Purchased ----- 1,000 s tons..	41.9	43.3	*43.6	59.3
	Produced and consumed ----- do..	7.5	(X)	(S)	(X)
332045	Steel:				
	Purchased ----- do..	**80.7	90.4	(S)	259.5
	Produced and consumed ----- do..	-	(X)	(S)	(X)
336100	Aluminum and aluminum-base alloy:				
	Purchased ----- million lb..	4.5	3.7	(S)	5.5
	Produced and consumed ----- do..	(S)	(X)	(S)	(X)
336200	Copper and copper-base alloy:				
	Purchased ----- do..	(S)	.2	(X)	(9)
	Produced and consumed ----- do..	-	(X)	(X)	(X)
336902	Other nonferrous:				
	Purchased ----- do..	(D)	(D)	(X)	(9)
	Produced and consumed ----- do..	-	(X)	(X)	(X)
335602	Welding rod ----- do..	*8.5	4.5	(X)	(9)
	Iron and steel forgings:				
346202	Wheels and axles:				
	Purchased ----- 1,000 s tons..	*76.4	50.7	(X)	(9)
	Produced and consumed ----- do..	-	(X)	(X)	(X)
	Other:				
	Purchased ----- do..	*63.5	46.7	(X)	(9)
	Produced and consumed ----- do..	63.5	(X)	(X)	(X)
351920	Diesel and semidiesel engines:				
	Purchased ----- thousands..	(D)	(D)	(D)	(D)
	Produced and consumed ----- do..	(Z)	(X)	(S)	(X)
362120	Integral horsepower electric motors and generators (1 hp or more):				
	Purchased ----- do..	11.1	55.0	(D)	(D)
	Produced and consumed ----- do..	(X)	(X)	(S)	(X)
356201	Roller bearings ----- do..	(X)	31.9	(X)	53.8
356218	Ball bearings ----- do..	(X)	.2	(X)	.9
356810	Plain bearings and bushings ----- do..	(X)	6.4	(X)	(D)
356601	Speed changers, gears, and industrial high speed drivers ----- do..	(X)	60.5	(X)	(D)
351991	Diesel engine parts ----- do..	(X)	(D)	(X)	(D)
374311	Locomotive parts, other than brakes ----- do..	(X)	(D)	(X)	(9)
374332	Brakes, railway and street car (air and vacuum) ----- do..	(X)	53.0	(X)	*135.6
361302	Railway electrical control equipment ----- do..	(X)	(D)	(X)	61.5
374331	Railway car and street car parts not listed above ----- do..	(X)	117.2	(X)	231.6
285101	Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products ----- 1,000 gal..	(S)	9.2	(X)	16.6
345001	Bolts, nuts, screws, washers, rivets, and screw machine products ----- do..	(X)	17.9	(X)	21.4
970099	All other materials and components, parts, containers, and supplies ----- do..	(X)	287.9	(X)	*709.8
971000	Materials, parts, containers, and supplies, n.s.k. ² ----- do..	(X)	303.1	(X)	43.3
	INDUSTRY 3751, MOTORCYCLES, BICYCLES, AND PARTS				
	Materials, parts, containers, and supplies ----- do..	(X)	636.0	(X)	627.8
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons..	50.7	23.9	6.5	3.3
331012	Sheet and strip ----- do..	(S)	72.4	**120.2	44.7
331017	Wire and wire products ----- do..	(S)	1.6	4.6	2.2
331015	Structural shapes ----- do..	(S)	4.6	(10)	(10)
331013	Plates ----- do..	(S)	1.0	(10)	(10)
331019	All other carbon steel mill shapes and forms ----- do..	11.2	6.0	**32.1	17.8
331025	Alloy steel, including stainless ----- do..	(D)	(D)	6.7	*2.5
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- million lb..	(S)	.7	1.2	.9
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do..	(S)	1.0	(S)	.5
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.) ----- do..	(S)	1.3	(S)	.5
	Castings (rough and semifinished):				
332045	Steel:				
	Purchased ----- 1,000 s tons..	(S)	(D)	(D)	(D)
	Produced and consumed ----- do..	-	(X)	(D)	(X)
336100	Aluminum and aluminum-base alloy castings:				
	Purchased ----- million lb..	(S)	4.2	2.2	4.0
	Produced and consumed ----- do..	(S)	(X)	(S)	(X)
346200	Iron and steel forgings:				
	Purchased ----- 1,000 s tons..	**1.9	2.4	4.8	9.4
	Produced and consumed ----- do..	-	(X)	(S)	(X)
	Bearings:				
356218	Ball ----- do..	(X)	2.0	(X)	2.4
356201	Roller ----- do..	(X)	(D)	(X)	(Z)
304101	Rubber and plastics hose and belting ----- do..	(X)	(D)	(X)	(11)
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets ----- do..	(X)	1.0	(X)	1.4
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes ----- million lb..	(S)	4.3	**3.9	2.7

See footnotes at end of table.

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1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3751, MOTORCYCLES, BICYCLES, AND PARTS—Con.				
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	5.8	(X)	15.4
285101	Paints, varnishes, lacquers, shellacs, japans, enamels and allied products ----- 1,000 gal.	(S)	7.4	(X)	4.7
301101	Pneumatic tires and inner tubes ----- million tires	(S)	54.2	(S)	35.4
351901	Internal combustion engines, gasoline ----- thousands	(S)	172.8	(S)	105.1
371411	Trailer axles, wheels, brakes, undercarriages, and other metal vehicular parts -----	(X)	(D)	(X)	5.5
970099	All other materials and components, parts, containers, and supplies -----	(X)	243.6	(X)	11309.7
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	133.8	(X)	54.8
	INDUSTRY 3792, TRAVEL TRAILERS AND CAMPERs				
	Materials, parts, containers, and supplies -----	(X)	779.2	(X)	990.4
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons	(S)	2.1	(S)	4.8
331012	Sheet and strip ----- do	(S)	7.4	(S)	15.9
331015	Structural shapes ----- do	(S)	8.4	39.8	12.0
331068	All other carbon steel mill shapes and forms ----- do	1.3	.8	(S)	8.8
	Alloy steel, except stainless:				
331021	Bars and bar shapes ----- do	(S)	1.8	(D)	(D)
331029	All other alloy steel mill shapes and forms ----- do	(S)	.8	(S)	4.1
331031	Stainless steel ----- do	**4	.8	(S)	.4
335792	Insulated copper wire and cable, except magnet wire (quantity of copper conten ----- million lb	**1.7	2.2	(S)	3.3
	Copper and copper-base alloy:				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes ----- do	(S)	1.3	(S)	.3
335152	Pipe and tube ----- do	(S)		(S)	1.3
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do	(S)	24.7	(S)	36.3
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do	(S)	22.5	**12.9	10.1
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welding tubing, etc.) ----- do	(S)		(S)	2.0
	Castings (rough and semifinished):				
332045	Steel:				
	Purchased ----- 1,000 s tons	(S)	.5	(D)	(D)
	Produced and consumed ----- do	-	(X)	(S)	(X)
336100	Aluminum and aluminum-base alloy:				
	Purchased ----- million lb	(S)	.6	(S)	1.7
	Produced and consumed ----- do	-	(X)	(S)	(X)
343201	Metal plumbing fixtures, fittings, and trim, including enameled ----- do	(X)	6.4	(X)	18.8
344201	Metal doors and door units, windows and window units ----- do	(X)	24.3	(X)	38.8
344401	Fabricated sheet metal products, except stampings ----- do	(X)	8.5	(X)	16.3
345001	Bolts, nuts, screws, rivets, and screw machine products ----- do	(X)	9.4	(X)	14.0
346901	Metal stampings ----- 1,000 s tons	(S)	3.2	(X)	(12)
227001	Carpeting ----- do	(X)	7.5	(X)	(12)
229501	Coated, impregnated, and laminated fabrics ----- million lin yd	**15.8	8.0	(S)	16.2
239101	Curtains and draperies ----- do	(X)	10.6	(X)	(12)
242103	Dressed lumber ----- million bd ft	(X)	19.1	(X)	21.0
243056	Plywood ----- do	(X)	37.9	(X)	54.2
243011	Millwork, including wood doors, window sashes, moldings, and cabinets ----- do	(X)	14.7	(X)	11.9
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc. ----- million lb	(S)	8.9	(X)	(12)
307901	Plastics products consumed in the form of sheets, rods, tubes, and other shapes ----- do	(X)	-	(X)	(12)
307902	Fabricated plastics products, except gaskets ----- do	(X)	16.4	(X)	14.9
285101	Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products ----- do	(S)	5.6	(X)	7.3
320102	Glass and glass products, including windows and mirrors ----- do	(X)	25.6	(X)	(12)
343301	Heating equipment, except electric ----- do	(X)	14.2	(X)	19.8
358503	Air conditioning equipment ----- do	(X)	9.9	(X)	(12)
363001	Household appliances, including refrigerators, cooking equipment, and other household appliances except air conditioners ----- do	(X)	44.1	(X)	74.2
364300	Current-carrying wiring devices ----- do	(X)	8.2	(X)	23.3
301101	Pneumatic tires and inner tubes ----- do	(S)	10.9	(X)	21.4
371121	Purchased chassis for motor homes ----- millions	(S)	36.1	(X)	(12)
371411	Trailer axles, wheels, brakes, under carriages, and other metal vehicular parts ----- do	(X)	40.5	(X)	62.9
970099	All other materials and components, parts, containers, and supplies ----- do	(X)	111.6	(X)	12247.0
971000	Materials, parts, containers, and supplies, n.s.k. ² ----- do	(X)	228.6	(X)	223.9
	INDUSTRY 3795, TANKS AND TANK COMPONENTS				
	Materials, parts, containers, and supplies -----	(X)	1 369.8	(X)	565.8
	Mill shapes and forms (except castings and forgings):				
	Carbon steel:				
331017	Wire and wire products ----- 1,000 s tons	(D)	(D)	(D)	(D)
331012	Sheet and strip ----- do	(S)	5.5	(D)	(D)
331013	Plates ----- do	(D)	(D)	(D)	(D)
331015	Structural shapes ----- do	(D)	(D)	(D)	(D)
331011	Bars and bar shapes ----- do	(S)	18.4	(D)	(D)
331068	All other carbon steel mill shapes and forms ----- do	-	-	(D)	(D)
	Alloy steel, except stainless:				
331021	Bars and bar shapes ----- do	(D)	(D)	(D)	(D)
331029	All other alloy steel mill shapes and forms ----- do	(D)	(D)	(D)	(D)

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3795, TANKS AND TANK COMPONENTS—Con.				
	Mill shapes and forms (except castings and forgings) —Con.				
	Stainless steel:				
331033	Sheet and strip ----- 1,000 s tons..	(D)	(D)	(D)	(D)
331050	All other stainless steel mill shapes and forms ----- do..	(D)	(D)	(D)	(D)
	Copper and copper-base alloy:				
335102	Rod, bar, and mechanical wire, including extruded and/or drawn shapes -----million lb..	-	-	(D)	(D)
335143	Plate, sheet, and strip, including military cups and discs ----- do..	(D)	(D)	(D)	(D)
335152	Pipe and tube ----- do..	(D)	(D)	-	-
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil ----- do..	(D)	(D)	(D)	(D)
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do..	(D)	(D)	(D)	(D)
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.) ----- do..	(D)	(D)	(D)	(D)
331051	Pig iron, excluding silvery iron ----- 1,000 s tons..	(D)	(D)	(D)	(D)
190020	Aluminum and aluminum-base scrap (excluding home scrap) -----million lb..	-	-	-	-
339915	Metal powders ----- do..	-	-	(D)	(D)
	Castings (rough and semi-finished):				
332011	Iron (gray and malleable): Purchased ----- 1,000 s tons..	(S)	20.0	(D)	(D)
	Produced and consumed ----- do..	(D)	(X)	(D)	(X)
332045	Steel: Purchased ----- do..	(D)	(D)	**3.4	10.9
	Produced and consumed ----- do..	-	(X)	(S)	(X)
336100	Aluminum and aluminum-base alloy: Purchased -----million lb..	(D)	(D)	(D)	(D)
	Produced and consumed ----- do..	-	(X)	(S)	(X)
	Forgings:				
346200	Iron and steel: Purchased ----- 1,000 s tons..	(S)	33.4	(S)	32.6
	Produced and consumed ----- do..	-	(X)	(S)	(X)
346310	Aluminum and aluminum-base alloy: Purchased -----million lb..	(D)	(D)	(D)	(D)
	Produced and consumed ----- do..	-	(X)	(D)	(X)
362110	Fractional horse power electric motors (less than 1 hp): Timing motors, synchronous and subsynchronous: Purchased ----- thousands..	(D)	(D)	(D)	(D)
	Produced and consumed ----- do..	-	(X)	(D)	(X)
289217	Smokeless powder -----million lb..	-	-	-	-
	Bearings:				
356218	Ball -----	(X)	.8	(X)	(D)
356228	Roller -----	(X)	-	(X)	2.4
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes -----million lb..	(D)	(D)	(D)	(D)
242101	Rough and dressed lumber ----- million bd ft..	(D)	(D)	(X)	(13)
265001	Paperboard containers, boxes and corrugated paperboard --- 1,000 s tons..	(D)	(D)	(X)	(13)
970099	All other materials and components, parts, containers, and supplies -----	(X)	443.0	(X)	1331.1
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	509.4	(X)	8.9
	INDUSTRY 3799, TRANSPORTATION EQUIPMENT, N.E.C.				
	Materials, parts, containers, and supplies -----	(X)	469.4	(X)	356.7
	Mill shapes and forms, except castings and forgings:				
	Carbon steel:				
331011	Bars and bar shapes ----- 1,000 s tons..	**21.6	13.6	(S)	13.3
331012	Sheet and strip ----- do..	(S)	23.9	(S)	29.2
331017	Wire and wire products ----- do..	(S)	3.3	6.9	2.0
331013	Plates ----- do..	(S)	1.9	*7.4	2.8
331015	Structural shapes ----- do..	(S)	9.9	(S)	14.1
331068	All other carbon steel mill shapes and forms ----- do..	2.0	1.5	(S)	15.4
331025	Alloy steel, including stainless ----- do..	(S)	.8	.5	.4
	Aluminum and aluminum-base alloy:				
335301	Sheet, plate, and foil -----million lb..	*3.3	4.9	(S)	1.9
335405	Extruded shapes, including extruded rod, bar, pipe, tube, etc. ----- do..	(S)	8.2	5.6	4.3
335008	All other aluminum mill shapes and forms (wire, rolled rod and bar, powder, welded tubing, etc.) ----- do..	(S)	2.9	(D)	(D)
	Castings (rough and semifinished):				
332045	Steel: Purchased ----- 1,000 s tons..	(S)	4.5	1.9	1.6
	Produced and consumed ----- do..	-	(X)	(X)	(X)
336100	Aluminum and aluminum-base alloy castings: Purchased -----million lb..	(D)	(D)	(S)	3.4
	Produced and consumed ----- do..	-	(X)	(S)	(X)
346200	Iron and steel forgings: Purchased ----- 1,000 s tons..	*1.4	3.0	(S)	.8
	Produced and consumed ----- do..	-	(X)	(S)	(X)
	Bearings:				
356218	Ball -----	(X)	2.8	(X)	1.6
356201	Roller -----	(X)	1.8	(X)	2.6
306902	Fabricated rubber products, except tires, tubes, hose, belting, and gaskets -----	(X)	3.9	(X)	3.0
282104	Plastics resins consumed in the form of granules, pellets, powders, liquids, etc., but excluding sheets, rods, tubes, and shapes -----million lb..	(D)	(D)	(D)	(D)
307903	Plastics products consumed in the form of sheets, rods, tubes, and other shapes -----	(X)	3.7	(X)	2.6
285101	Paints, varnishes, lacquers, shellacs, japans, enamels, and allied products ----- 1,000 gals..	(S)	6.3	(X)	4.5
301101	Pneumatic tires and inner tubes ----- million tires..	(S)	14.2	(X)	16.1
351901	Internal combustion engines, gasoline ----- thousands..	50.3	12.0	(D)	(D)

See footnotes at end of table.

Table 7. Materials Consumed by Kind: 1982 and 1977—Con.

[Includes quantity and cost of materials consumed or put into production by establishments classified only in this industry. For further explanation, see Cost of Materials in appendix. For meaning of abbreviations and symbols, see Introductory text]

1982 material code	Material	1982		1977	
		Quantity ¹	Delivered cost (million dollars)	Quantity ¹	Delivered cost (million dollars)
	INDUSTRY 3799, TRANSPORTATION EQUIPMENT, N.E.C.—Con.				
371411	Trailer axles, wheels, brakes, undercarriages, and other metal vehicular parts -----	(X)	36.6	(X)	31.4
970099	All other materials and components, parts, containers, and supplies -----	(X)	127.4	(X)	94.5
971000	Materials, parts, containers, and supplies, n.s.k. ² -----	(X)	154.6	(X)	75.9

¹For some establishments, data have been estimated from central unit values which are based on quantity-cost relationships of reported data. The following symbols are used when percentage of each quantity figure estimated in this manner equals or exceeds 10 percent of published figure: * 10 to 19 percent estimated; ** 20 to 29 percent estimated. If 30 percent or more is estimated, figure is replaced by (S).

²Total cost of materials of establishments that did not report detailed materials data, including establishments that were not mailed a form.

³For 1977, material codes 332011, 336902, 349421, 349461, 366251, 366001, and 336004 were included with material code 970099.

⁴For 1982, material code 336902 is combined with material code 970099 to avoid disclosing data for individual companies.

⁵From 1977 Census of Manufactures Supplemental Inquiry: Consumption of Materials, Parts, Containers, and Supplies During 1977 (Form MA-131).

⁶For 1977, material codes 332011, 336902, 356601, 356831, 356832, 336001, 342971, 356151, and 366251 were included with material code 970099.

⁷For 1977, material code 335405 was included with material code 335008.

⁸For 1977, material codes 336200, 336902, 335602, 346202, and 346203 were included with material code 970099.

⁹For 1977, material code 374311 was included with material code 374332.

¹⁰For 1977, material codes 331015 and 331013 were combined with material code 331025 to avoid disclosing data for individual companies.

¹¹For 1977, material code 304101 was included in material code 970099.

¹²For 1977, material codes 346901, 227001, 239101, 282104, 307901, 320102, 358503, and 371121 were included with material code 970099.

¹³For 1977, material codes 242101 and 265001 were included with material code 970099.



APPENDIX A.

Explanation of Terms

This appendix is in two sections. Section 1 includes items which were requested of all establishments that were mailed census of manufactures forms including annual survey of manufactures (ASM) forms. Note that this section also includes several items (number of establishments and companies, value added, classes of products, and specialization and coverage ratios) that were not included on the report forms but were derived from information collected on the forms. Section 2 covers supplementary items that were requested only from establishments included in the ASM sample. Results of the supplementary ASM inquiries are included in tables 3c and 3d of this report.

SECTION 1. ITEMS COLLECTED OR DERIVED BASED ON ALL CENSUS OF MANUFACTURES (INCLUDING ASM) REPORT FORMS

Number of establishments and companies—As discussed in the Introduction, a separate report was required for each manufacturing establishment (plant) with one employee or more. An establishment is defined as a single physical location where manufacturing is performed. A company, on the other hand, is defined as a business organization consisting of one establishment or more under common ownership or control.

If the company operates at different physical locations, even if the individual locations are producing the same line of goods, a separate report was requested for each location. If the company operates in two or more distinct lines of manufacturing at the same location, a separate report was requested for each activity.

An establishment not in operation for any portion of the year was requested to return the report form with the proper notation in the "Operational Status" section of the form. In addition, the establishment was requested to report data on the number of custodial employees, capital expenditures, inventories, or any shipments from inventories during the portion of the year the plant was in operation.

In this report, data are shown for establishments in operation at any time during the year. A comparison with the number of establishments in operation at the end of the year will be provided in the Introduction to Part 1 of the General Summary subject report.

Employment and related items—The regular report forms requested separate information on production workers as of a payroll period for each quarter of the year and on other employees as of the payroll period which included the 12th of March.

All employees—This item includes all full-time and part-time employees on the payrolls of operating manufacturing establishments during any part of the pay period ending nearest the 12th of the months specified on the report form. Included are all persons on paid sick leave, paid holidays, and paid vacations during these pay periods. Officers of corporations are included as employees; proprietors and partners of unincorporated firms are excluded. The "all employees" number is the average number of production workers plus the number of other employees in mid-March. The number of production workers is the average for the payroll periods including the 12th of March, May, August, and November.

Production workers—This item includes workers (up through the line-supervisor level) engaged in fabricating, processing, assembling, inspecting, receiving, storing, handling, packing, warehousing, shipping (but not delivering), maintenance, repair, janitorial and guard services, product development, auxiliary production for plant's own use (e.g., power plant), recordkeeping, and other services closely associated with these production operations at the establishment covered by the report. Employees above the working-supervisor level are excluded from this item.

All other employees—This item covers nonproduction employees of the manufacturing establishment including those engaged in factory supervision above the line-supervisor level. It includes sales (including driver salespersons), sales delivery (highway truck drivers and their helpers), advertising, credit, collection, installation and servicing of own products, clerical and routine office function, executive, purchasing, financing, legal, personnel (including cafeteria, medical, etc.), professional, and technical employees. Also included are employees on the payroll of the manufacturing establishment who are engaged in the construction of major additions or alterations to the plant and who are utilized as a separate work force.

In addition to reports sent to operating manufacturing establishments, information on employment during the payroll period which included March 12 and annual payrolls was also requested of auxiliary units (e.g., administrative offices, warehouses, and research and development laboratories) of multiestablishment companies. However, these figures are not included in the totals for individual industries shown in this report. They are included in the general summary and geographic area reports and in the final bound volumes as a separate category.

Payrolls—This item includes the gross earnings of all employees on the payroll of operating manufacturing establishments paid in the calendar year 1982. Respondents were told they could follow the definition of payrolls used for calculating the Federal withholding tax. It includes all forms of compensation, such as salaries, wages, commissions, dismissal pay, all bonuses, vacation and sick leave pay, and compensation in kind, prior to such deductions as employees' Social Security contributions, withholding taxes, group insurance, union dues, and savings bonds. The total includes salaries of officers

of corporations, but excludes payments to proprietors or partners of unincorporated concerns. Also excluded are payments to members of Armed Forces and pensioners carried on the active payroll of manufacturing establishments.

The census definition of payrolls is identical to that recommended to all Federal statistical agencies by the Office of Management and Budget. It should be noted that this definition does not include employers' Social Security contributions or other nonpayroll labor costs, such as employees' pension plans, group insurance premiums, and workers' compensation.

The ASM provides estimates of employers' supplemental labor costs, both those required by Federal and State laws and those incurred voluntarily or as part of collective bargaining agreements. (Supplemental labor costs are explained later in this appendix.)

As in the case of employment figures, the payrolls of separate auxiliary units of multiestablishment companies are not included in the totals for individual industries or industry groups.

Production-worker hours—This item covers hours worked or paid for at the plant, including actual overtime hours (not straight-time equivalent hours). It excludes hours paid for vacations, holidays, or sick leave.

Cost of materials—This term refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred by the establishment in acquiring these materials. It includes the cost of materials or fuel consumed, whether purchased by the individual establishment from other companies, transferred to it from other establishments of the same company, or withdrawn from inventory during the year.

The important components of this cost item are (1) all raw materials, semifinished goods, parts, components, containers, scrap, and supplies put into production or used as operating supplies and for repair and maintenance during the year, (2) electric energy purchased, (3) fuels consumed for heat, power, or the generation of electricity, (4) work done by others on materials or parts furnished by manufacturing establishments (contract work), and (5) products bought and resold in the same condition. (See discussion of duplication of data below.)

Specific materials consumed—In addition to the total cost of materials, which every establishment was required to report, information was also collected for most manufacturing industries on the consumption of major materials used in manufacturing. The inquiries were restricted to those materials which were important parts of the cost of production in a particular industry and for which cost information was available from manufacturers' records. Information on the specific materials consumed is shown in table 7 if appropriate to the industry. Establishments consuming less than a specified amount (usually \$10,000) of a specific material were not requested to report consumption of that material separately. Also, the cost of materials for the small establishments for which either administrative records or short forms were used was imputed as "not specified by kind." (See the Introduction for the importance of administrative records in the industry.)

Value of shipments—This item covers the received or receivable net selling values, f.o.b. plant (exclusive of freight and taxes), of all products shipped, both primary and secondary, as well as all miscellaneous receipts, such as receipts for contract work performed for others, installation and repair, sales of scrap, and sales of products bought and resold without further

processing. Included are all items made by or for the establishments from materials owned by it, whether sold, transferred to other plants of the same company, or shipped on consignment. The net selling value of products made in one plant on a contract basis from materials owned by another was reported by the plant providing the materials.

In the case of multiunit companies, the manufacturer was requested to report the value of products transferred to other establishments of the same company at full economic or commercial value, including not only the direct cost of production but also a reasonable proportion of "all other costs" (including company overhead) and profit. (See discussion of duplication of data below.)

Individual products—As in previous censuses, data were collected for almost all industries on the quantity and value of individual products shipped. In the 1982 census program, information was collected on the output of approximately 11,000 individual product items. The term "product," as used in the census of manufactures, represents the finest level of detail for which output information was requested. Consequently, it is not necessarily synonymous with the term "product" as used in the marketing sense. In some cases it may be much more detailed and, in other cases, it is more aggregative. For example, "pharmaceutical preparations" was distributed into over 100 items; whereas, "motor gasoline" was reported as a single item.

Approximately 6,000 of the product items were listed separately on the 1982 census report forms. Data for about 5,000 products were obtained in the monthly, quarterly, or annual surveys comprising the Current Industrial Reports series of the Census Bureau. Totals for the year 1982 for these items, as derived from the commodity surveys, are shown in the "products shipped" table (table 6a) together with the tieline total value collected in the census for reconciliation purposes.

The list of products for which separate information was collected was prepared after consultation with industry and government representatives. Comparability with previous figures was given considerable weight in the selection of product categories so that comparable 1977 information is presented for most products.

Typically, both quantity and value of shipments information was collected. However, if quantity was not significant or could not be reported by manufacturers, only value of shipments was collected.

Shipments include both commercial shipments and transfers of products to other plants of the same company. For industries in which a considerable portion of the total shipments is transferred to other plants of the same company, separate information on interplant transfers was also collected. Moreover, for products that are used to a large degree within the same establishment as materials or components in the fabrication of other products, total production and often consumption of the item within the plant was collected. Typically, the information on production was also collected for products for which there are significant differences between total production and shipments in a given year because of wide fluctuations in finished goods inventories. Other measures of output of products with long production cycles were used as appropriate and feasible.

Classes of products—To summarize the product information, the separate products were aggregated into classes of products that, in turn, were grouped into all primary products of each industry. The code structure used is a seven-digit number for the

individual product, a five-digit number for the class of product, and a four-digit number for the total primary products in an industry. (See Introduction, Industry Classification of Establishments, for application of the coding structure to the assignment of SIC codes for establishments.)

In the 1982 census, the 11,000 products were grouped into approximately 1,500 separate classes on the basis of general similarity of manufacturing processes, types of materials used, and the like. However, the grouping of products was affected by the economic significance of the class and, in some cases, dissimilar products were grouped because the products were not sufficiently significant to warrant separate classes.

Duplication in cost of materials and value of shipments—The aggregate of the cost of materials and value of shipments figures for industry groups and for all manufacturing industries includes large amounts of duplication, since the products of some industries are used as materials by others. With some important exceptions, such as for motor vehicles and parts, this duplication is not significant at the four-digit industry level. However, it is significant at the two-digit and three-digit industry group level because these totals often include industries that represent successive stages in the production of a finished manufactured product. Examples are the addition of flour mills to bakeries in the "Food" group and the addition of pulp mills to paper mills in the "Paper and Allied Products" group of industries. Estimates of the overall extent of this duplication indicate that the value of manufactured products exclusive of such duplication (the value of finished manufactures) tends to approximate two-thirds of the total value of products reported in the census of manufactures.

Value added by manufacture—This measure of manufacturing activity is derived by subtracting the cost of materials, supplies, containers, fuel, purchased electricity, and contract work from the value of shipments (products manufactured plus receipts for services rendered). The result of this calculation is adjusted by the addition of value added by merchandising operations (i.e., the difference between the sales value and the cost of merchandise sold without further manufacture, processing, or assembly) plus the net change in finished goods and work-in-process between the beginning- and end-of-year inventories.

Because of the change in instructions for reporting inventories for 1982, the 1982 figure for value added is not strictly comparable to prior-year data. This is explained more fully in the inventories section below.

"Value added" avoids the duplication in the figure for value of shipments that results from the use of products of some establishments as materials by others. Value added is considered to be the best value measure available for comparing the relative economic importance of manufacturing among industries and geographic areas.

New and used capital expenditures—For establishments in operation and establishments under construction but not yet in operation, manufacturers were asked to report their new expenditures for (1) permanent additions and major alterations to manufacturing establishments, and (2) machinery and equipment used for replacement and additions to plant capacity if they were of the type for which depreciation accounts were ordinarily maintained.

The totals for new expenditures exclude that portion of expenditures leased from nonmanufacturing concerns, new facilities owned by the Federal Government but operated under

contract by private companies, and plant and equipment furnished to the manufacturer by communities and nonprofit organizations. Also excluded are expenditures for used plant and equipment (although reported in the census), expenditures for land, and cost of maintenance and repairs charged as current operating expenses.

Manufacturers were also requested to report the value of all used buildings and equipment purchased during the year at the purchase price. For any equipment or structure transferred to the use of the reporting establishment by the parent company or one of its subsidiaries, the value at which it was transferred to the establishment was to be reported. Furthermore, if the establishment changed ownership during the year, the cost of the fixed assets (building and equipment) was to be reported under used capital expenditures.

Total expenditures for used plant and equipment is a universe figure; i.e., it is collected on all census forms. However, the breakdown of this figure between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form and is subject to sampling error (see table 3d). The data for total new capital expenditures, new building expenditures, and new machinery expenditures, as well as the data for total used expenditures, are shown in both tables 3a and 3d. The figure in table 3a is a census universe total and may differ from the results of the ASM sample shown in table 3d. Since the figures in table 3d are subject to sampling error, they are not considered as reliable as the universe figures.

End-of-year inventories—Respondents were asked to report their 1981 and 1982 end-of-year inventories at cost or market. Effective with the 1982 Economic Censuses, this change to a uniform instruction for reporting inventories was introduced for all sector reports. Prior to 1982, respondents were permitted to value inventories using any generally accepted accounting method (FIFO, LIFO, market, to name a few). In 1982, LIFO users were asked to first report inventory values prior to the LIFO adjustment and then to report the LIFO reserve and the LIFO value after adjustment for the reserve.

Because of this change in reporting instructions, the 1982 data for inventories and value added by manufacture included in the tables of this report are not comparable to the prior-year data shown in table 1a of this report and in historical census of manufactures and annual survey of manufactures publications. Inventories and value added data estimated on a basis comparable to the historical data, using the reported information for 1982, are shown in footnote 4 of table 1a. However, the end-of-1981 figure shown in this footnote may differ from the corresponding value published as part of the 1981 Annual Survey of Manufactures.

This difference at the four-digit SIC level is due primarily to the effects of industry shifts. As described in the Industry Classification of Establishments section of the Introduction, ASM noncertainty plants are allowed to shift from one industry to another in a census year; whereas, they are "frozen" in a particular industry in ASM years. Other explanations for this difference include the effects of sampling and processing errors and revisions to end-of-1981 data reported by respondents.

In using inventory data by stage of fabrication for "all industries" and at the two-digit industry level, it should be noted that an item treated as a finished product by an establishment in one industry may be reported as a raw material by another establishment in a different industry. For example, the finished-product inventories of a steel mill would be reported as raw

materials by a stamping plant. Such differences are present in the inventory figures by stage of fabrication shown for individual industries, industry groups, and "all manufacturing," which are aggregates of figures reported by establishments in specified industries.

Specialization and coverage ratios—These items are not collected on the report forms but are derived from the data shown in table 5b. An establishment is classified in a particular industry if its shipments of primary products of that industry exceed in value its shipments of the products of any other single industry.

As noted in the Introduction, an establishment's shipments include those products assigned to an industry (primary products), those considered primary to other industries (secondary

products), and receipts for miscellaneous activities (merchandising, contract work, resales, etc.). Specialization and coverage ratios have been developed to measure the relationship of primary product shipments to the data on shipments for the industry shown in tables 1a through 5a and data on product shipments shown in tables 6a through 6c.

Specialization ratio represents the ratio of primary product shipments to total product shipments (primary and secondary, excluding miscellaneous receipts) for the establishments classified in the industry.

Coverage ratio represents the ratio of primary products shipped by the establishments classified in the industry to the total shipments of such products that are shipped by all manufacturing establishments wherever classified.

SECTION 2. ITEMS COLLECTED ONLY ON ASM REPORT FORMS

Supplemental labor costs—Supplemental labor costs are divided into legally required expenditures and payments for voluntary programs. The legally required portion consists primarily of Federal old age and survivors' insurance, unemployment compensation, and workers' compensation. Payments for voluntary programs include all programs not specifically required by legislation whether they were employer initiated or the result of collective bargaining. They include the employer portion of such plans as insurance premiums, premiums for supplemental accident and sickness insurance, pension plans, supplemental unemployment compensation, welfare plans, stock purchase plans on which the employer payment is not subject to withholding tax, and deferred profit-sharing plans. They exclude such items as company-operated cafeterias, in-plant medical services, free parking lots, discounts on employee purchases, and uniforms and work clothing for employees. While the excluded items do benefit employees and all or part of their cost generally is similar to the items covered in the ASM labor costs statistics, accounting records do not generally provide reliable figures on net employee benefits of these types.

Cost of purchased services—ASM establishments were requested to provide information on the cost of purchased services for the repair of buildings and other structures, the repair of machinery, and communication services. Included in the cost of purchased services for the repair of buildings and machinery are payments made for all maintenance and repair work on buildings and equipment, such as painting, roof repairs, replacing parts, and overhauling equipment. Such payments made to other establishments of the same company and for repair and maintenance of any leased property are also included. Extensive repairs or reconstruction that were capitalized are considered capital expenditures for used buildings and machinery and are, therefore, excluded from this item. Repair and maintenance costs provided by an owner as part of a rental contract or incurred directly by an establishment in using its own work force are also excluded.

The response coverage ratio shown in table 3d for each of the three types of purchased services listed above is a measure of the extent to which respondents reported for each item. It is derived for each item by calculating the ratio of the weighted employment (establishment data multiplied by sample weight; see section 3) for those ASM establishments that reported the

specific inquiry to the weighted total employment for all ASM establishments classified in the industry.

Electric energy used for heat and power—Data on the cost of purchased electric energy were collected on all census forms. However, data on the quantity of purchased electric energy and quantity of generated-less-sold electric energy were collected only on the ASM forms. The cost and quantity of purchased electric energy represent the amount actually used during the year for heat and power. In addition, information was collected on the quantity of electric energy generated by the establishment and the quantity of electric energy sold or transferred to other plants of the same company.

Beginning- and end-of-year depreciable assets—The data encompass all fixed depreciable assets on the books of establishments at the beginning and at the end of the year. The values shown (book value) represent the actual cost of assets at the time they were acquired, including all costs incurred in making the assets usable (such as transportation and installation). Included are all buildings, structures, machinery, and equipment (production, office, and transportation equipment) for which depreciation reserves are maintained. Excluded are non-depreciable capital assets, including inventories and intangible assets, such as patent rights and royalties. Also excluded are land and depletable assets, such as timber and mineral rights.

The definition of fixed depreciable assets is consistent with the definition of capital expenditures. For example, expenditures include actual capital outlays during the year, rather than the final value of equipment put in place and buildings completed during the year. Accordingly, the value of assets at the end of the year includes the value of construction in progress. In addition, respondents were requested to make certain that assets at the beginning of the year plus new and used capital expenditures, less retirements, equalled assets at the end of the year.

New and used capital expenditures—The data for total new capital expenditures, new building expenditures, new machinery expenditures, and total used capital expenditures are collected on all census forms. However, the breakdown between expenditures for used buildings and other structures and expenditures for used machinery and equipment is collected only on the ASM form. (See further explanation on capital expenditures in section 1.)

Breakdown of new capital expenditures for machinery and equipment—ASM establishments were requested to separate their capital expenditures for new machinery and equipment into (1) automobiles, trucks, etc., for highway use, (2) computers and peripheral data processing equipment, and (3) all other.

The category "automobiles, trucks, etc., for highway use" is intended to measure expenditures for vehicles designed for highway use that were acquired through a purchase or lease-purchase agreement. Vehicles normally operating off public highways (vehicles specifically designed to transport materials, property, or equipment on mining, construction, logging, and petroleum development projects) are excluded from this item.

The "not specified by kind" or n.s.k. item for expenditures for new machinery and buildings, shown in table 3d, represents the total machinery and equipment expenditures for establishments that did not break down their expenditures for the three specific categories. This means that for most industries the specific categories are understated.

Retirements—Included in this item is the gross value of assets sold, retired, scrapped, destroyed, etc., during 1982. When a complete operation or establishment changed ownership, the respondent was instructed to report the value of the assets sold at the original cost as recorded in the books of the seller. The respondent was also requested to report retirements of equipment or structures owned by a parent company that the establishment was using as if it were a tenant.

Rental payments—This item includes rental payments for the use of all items for which depreciation reserves would be maintained if they were owned by the establishment, e.g., structures and buildings, and production, office, and transportation equipment. Excluded are royalties and other payments for the use of intangibles and depletable assets, and land rents where separable.

When an establishment of a multiestablishment company was charged rent by another part of the same company for the use of assets owned by the company, it was instructed to exclude that cost from rental payments. However, the book value (original cost) of these company-owned assets was to be reported as assets of the establishment at the end of the year.

If there were assets at an establishment rented from another company, and the rents were paid centrally by the head office of the establishment, the company was instructed to report these rental payments as if they were paid directly by the establishment.

Depreciation charges—This item includes depreciation and amortization charged during the year against assets. Depreciation charged against fixed assets acquired since the beginning of the year and against assets sold or retired during the year are components of this category. Respondents were requested to make certain that they did not report accumulated depreciation.

APPENDIX B.

Annual Survey of Manufactures (ASM) Sampling and Estimating Methodologies

DESCRIPTION OF SURVEY SAMPLE

The Annual Survey of Manufactures (ASM) contains two components. The mail portion of the survey is a probability sample of about 55,000 manufacturing establishments selected from a total of about 225,000 establishments. These 225,000 establishments represent all manufacturing establishments of multiunit companies and all single-unit manufacturing establishments with five employees or more tabulated in the 1977 Census of Manufactures. This mail portion is supplemented by a Social Security Administration list of new manufacturing establishments opened after 1977. The individual establishments were defined as the sampling unit for this sample. This is a change from the previous ASM sample when companies were used as the sampling unit. The implication of this change is that the probability of selection of any establishment relates only to the size of the establishment itself and is independent of the size of the company with which the establishment is affiliated. The efficiencies associated with the change to an establishment sample have made it possible to reduce the mail sample panel from 70,000 establishments in 1978 to 55,000 establishments in the current panel.

The nonmail portion of the survey includes all single-unit establishments that were tabulated with less than five employees in the 1977 Census of Manufactures. Although this portion contained approximately 125,000 establishments, it accounted for less than 2 percent of the estimate for total value of shipments at the total manufacturing level. This portion was not sampled; rather, the data for every establishment in this group were estimated based on selected information obtained annually from the administrative records of other Federal agencies. This administrative record information, which includes payroll, total employment, industry classification, and physical location of the establishment, was obtained under special conditions, which safeguard the confidentiality of both tax and census records. Estimates for data for these small establishments were developed using industry averages in conjunction with the administrative information.

The corresponding estimates for the mail and nonmail establishments were added together, along with the adjusted base-year differences as defined in Description of Estimating Procedures below. The remaining description of the survey sample relates only to the mail portion of the ASM sample.

All establishments with 250 employees or more in the 1977 census were included in the survey panel with certainty. These establishments collectively account for approximately 65 percent of the total value of shipments for manufacturing establishments in the 1977 census. Smaller establishments were sampled with probabilities ranging from 1.000 down to 0.005 in accordance with mathematical theory for optimum allocation of a sample.

The probabilities of selection assigned to the smaller establishments were proportional to measures of size determined for each establishment. For establishments included in the 1977 Census of Manufactures, the measure of size depended directly upon each establishment's 1977 product class values and the

historic variability of the year-to-year shipments of each product class. Roughly equivalent measures of size were assigned to postcensus birth establishments based on their industry codes and anticipated payroll and employment.

The method of assigning measures of size was used in order to maximize the precision (that is, minimize the variance of estimates of the year-to-year change) in the value of product class shipments. Implicitly, it also gave weight to differences in employment, value added, and other general statistics, for these are highly correlated with value of shipments. Individual sample selection probabilities were obtained by multiplying each establishment's final measure of size by an overall sampling fraction coefficient calculated to yield a total expected sample size.

The sample selection procedure gave each establishment in the sampling frame an independent chance of selection. This method of independent selection permits the rotation of establishments into and out of a given sample panel without introducing a bias into the survey estimates.

DESCRIPTION OF ESTIMATING PROCEDURES

Most of the ASM estimates for the years 1978-1981 were computed using a modified "difference estimate" formula. For each item, a base-year difference was developed. This base-year difference is equal to the difference between the 1977 census published number for an item total and the linear ASM estimate of the total for 1977. The ASM linear estimate was obtained by multiplying each sample establishment's data by its sample weight (the reciprocal of its probability of selection) and summing the weighted values.

This base-year difference was then adjusted to reflect the estimated growth at the four-digit or, in the case of product classes, five-digit based Standard Industrial Classification (SIC) level from 1977 to the year of the survey; for example, 1981. It should be noted that due to processing constraints, the growth factors lagged one year; i.e., if 1981 is the survey year, they were not based on the estimated growth from 1977 to 1981 but rather the growth from 1977 to 1980. This one-year lag had negligible effect on the estimates, particularly at the total manufacturing level where the adjusted base-year difference accounted for less than 1 percent of the estimate for total value of shipments.

These adjusted base-year differences were then added to the corresponding current-year linear estimates, which include the sum of the estimates for the mail and nonmail establishments, to produce the estimates for the years 1978-1981. Estimates developed by this procedure usually are far more reliable than comparable linear estimates developed from the current sample data alone.

The 1982 sample data included in table 3d were also developed using difference estimates. However, since the universe totals for the census year (1977 or 1982) were not known, a modification of the procedure described above was necessary. For each item in table 3d, except purchased services and breakdown of expenditures for new machinery and equipment (see further description in appendix A, section 2), linear

estimates of the publication totals from the ASM mail sample were adjusted by the difference between imputed census totals and the corresponding ASM mail sample estimates of these imputed totals. These imputed totals are obtained by applying industry average ratios to control item values at the establishment level. For example, an imputed total beginning assets figure is obtained by multiplying each establishment's total value of shipments by the industry (four-digit SIC) average for the ratio of beginning assets to shipments.

Separate estimates for the nonmail establishments were not developed. However, their contribution to the publication estimates is reflected in the difference adjustment.

The method of inventory valuation percentages included in table 3c was developed using both complete census information and ASM estimates. The percentages for the four major categories (LIFO, non-LIFO, valuation method not reported, and LIFO reported without associated value and reserve) were derived from the complete census and correspond to the values included in table 3d. The percentages for the specific non-LIFO methods of valuations (FIFO, average cost, specific costs, etc.) are ratio estimates developed from the ASM in conjunction with the census universe estimate for the total of the non-LIFO methods.

QUALIFICATIONS OF THE DATA

The estimates developed from the sample are apt to differ somewhat from the results of a survey covering all companies in the sampled lists but otherwise conducted under essentially the same conditions as the actual sample survey. The estimates of the magnitude of the sampling errors (the differences between the estimates obtained and the results theoretically obtained from a comparable, complete-coverage survey) are provided by the standard errors of the estimates.

The particular sample selected for the ASM is one of a large number of similar probability samples that, by chance, might have been selected under the same specifications. Each of the possible samples would yield somewhat different sets of results, and the standard errors are measures of the variation of all the possible sample estimates around the theoretical, comparable, complete-coverage values.

Estimates of the standard errors have been computed from the sample data for selected statistics in this report. Except for table 3c, they are presented in the form of relative standard errors, the standard errors divided by the estimated values to which they refer. In table 3c, "absolute" standard errors of the estimates are presented.

In conjunction with its associated estimate, the relative standard error may be used to define confidence intervals (ranges that would include the comparable, complete-coverage value for specified percentages of all the possible samples).

The complete coverage value would be included in the range:

1. From one standard error below to one standard error above the derived estimate for about two-thirds of all possible samples.

2. From two standard errors below to two standard errors above the derived estimate for about 19 out of 20 of all possible samples.
3. From three standard errors below to three standard errors above the derived estimate for nearly all samples.

An inference that the comparable, complete-survey result would be within the indicated ranges would be correct in approximately the relative frequencies shown. Those proportions, therefore, may be interpreted as defining the confidence that the estimates from a particular sample would differ from complete-coverage results by as much as one, two, or three standard errors, respectively.

For example, suppose an estimated total is shown as 50,000 with an associated relative standard error of 2 percent, that is, a standard error of 1,000 (2 percent of 50,000). There is approximately 67 percent confidence that the interval 49,000 to 51,000 includes the complete-coverage total and about 95 percent confidence that the interval 48,000 to 52,000 includes the complete-coverage total.

In addition to the sample errors, the estimates are subject to various response and operational errors: errors of collection, reporting, coding, transcription, imputation for nonresponse, etc. These operational errors would also occur if a complete canvass were to be conducted under the same conditions as the survey.

Explicit measures of their effects generally are not available. However, it is believed that most of the important operational errors were detected and corrected in the course of the Bureau's review of the data for reasonableness and consistency. The small operational errors usually remain. To some extent, they are compensating in the aggregated totals shown. When important operational errors were detected too late to correct the estimates, the data were suppressed or were specifically qualified in the tables.

As derived, the estimated standard errors included part of the effect of the operational errors. The total errors, which depend upon the joint effect of the sampling and operational errors, are usually of the order of size indicated by the standard error, or only moderately higher. However, for particular estimates, the total error may considerably exceed the standard errors shown.

The concept of complete coverage under the conditions prevailing for the ASM is not identical to the complete coverage of the census of manufactures, as the censuses have been conducted. Nearly all types of operational errors that affect the ASM also occur in the censuses. The ASM and the censuses, are conducted under quite different conditions, and operational errors can be better controlled in the ASM than in the censuses. As a result, for many of the census figures, the errors are of the same order of size as the total errors of the corresponding annual survey estimates. The differences between the census and ASM operating conditions also disturb, to some degree, the comparability of the ASM and census data.

Any figures shown in the tables in this publication having an associated standard error exceeding 15 percent may be of limited reliability. However, the figure may be combined with higher-level totals, creating a broader aggregate, which then may be of acceptable reliability.

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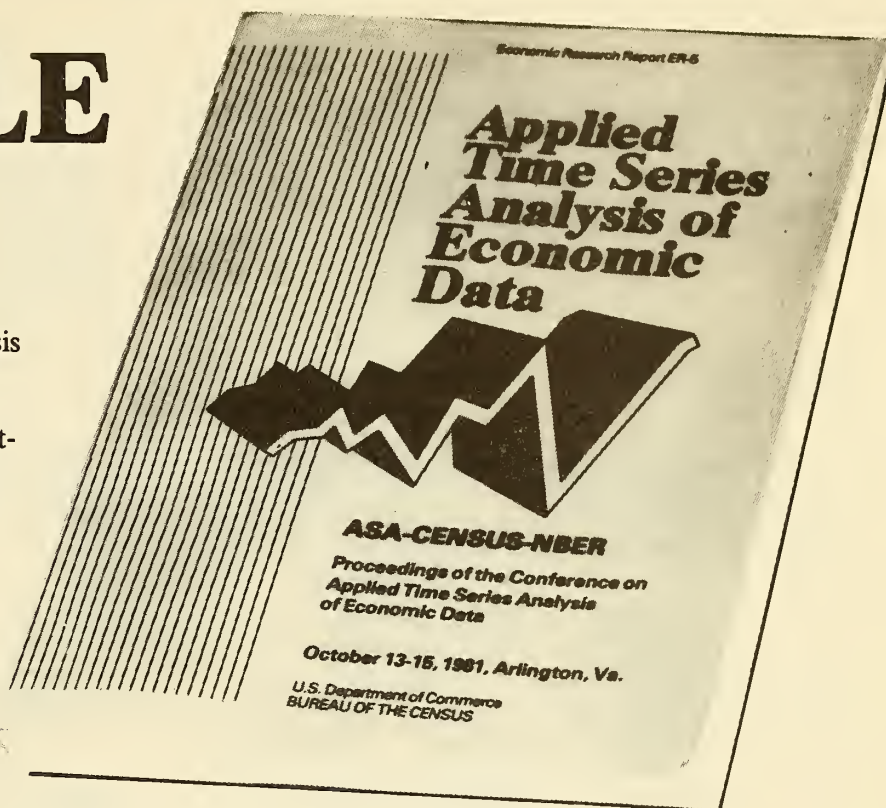
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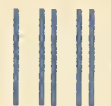
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